The OIL WEEKLY

149,650,000 BARRELS . . . CALIFORNIA'S CRUDE OIL PRODUCTION . . . FIRST HALF 1944

Although the beginning of the California Oil Industry is said to date from 1861, when two companies were incorporated for the purpose of "finding, producing, and dealing in petroleum products," the real development did not come until 1874, when two productive wells were drilled in Los Angeles county.

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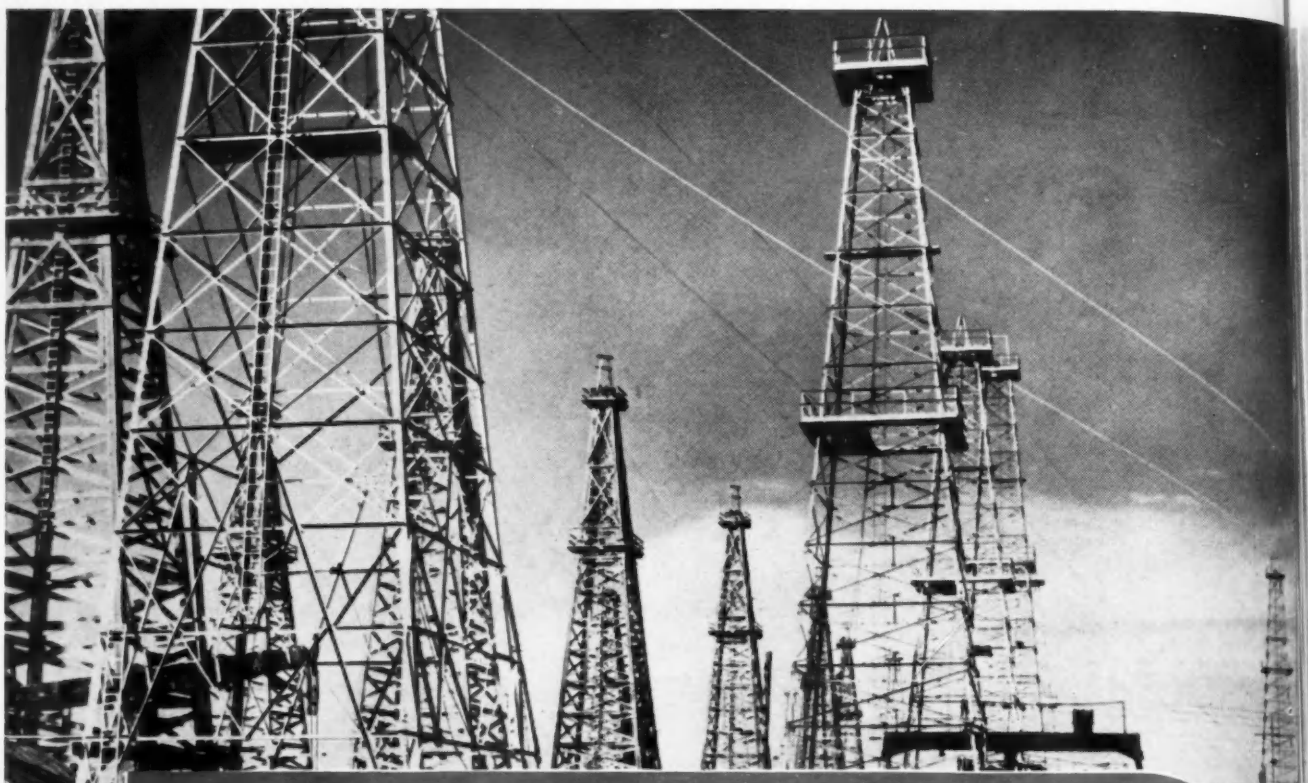
HOUSTON, TEXAS

September 25, 1944



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LOOKING AHEAD
... with the Editor

FOR some reason it has been the custom in Kansas to penetrate the Arbuckle zone only a few feet, and if no oil or gas is encountered, to abandon the hole as dry. This practice is very shortsighted, and as a result much new production has been passed up and the areas will have to be redrilled in the future.

So states J. T. Paddleford, geological engineer, in an article to be published in an early issue. He will explain why he believes producing horizons lie lower in the Arbuckle zone.

☆

ELECTRIC WELL LOGGING

Due to unavoidable circumstances the Hubert Guyod article on Electrical Well Logging scheduled for appearance in this issue of *The Oil Weekly* will not be presented until October 2 when the series will be resumed. It deals with the four-electrode method and is part 8 of the detailed presentation which has aroused widespread interest in oil circles.

THE OIL WEEKLY

ENGINEERING • NEWS • STATISTICS

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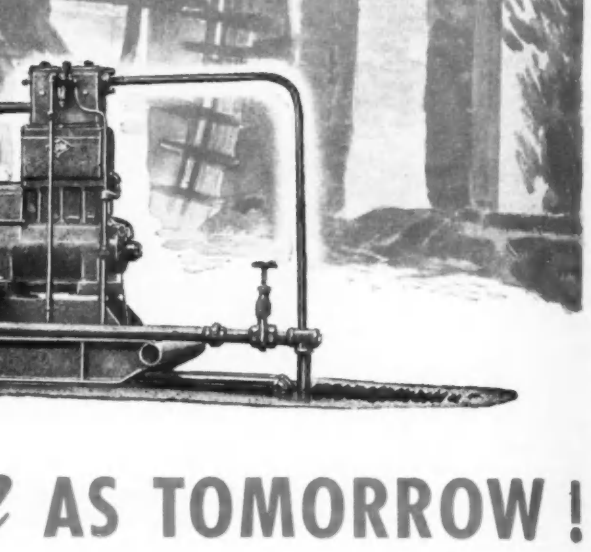

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PUMP THE MODERN WAY---USE KOBE

The Changing Panorama

Caribbean Area Gets Scarce Equipment

FOR several weeks there has been considerable discussion in petroleum circles about equipment manufacturers finishing some piece of drilling equipment for a domestic order, only to be instructed by PAW to ship it abroad instead of filling the United States order. Naturally, this has disrupted domestic programs, at least in some instances.

Here are the facts about the situation, according to C. P. Parsons, PAW director of materials:

"Operators in the Caribbean area, who are mostly Americans, were called upon by the military to drill so many wells and produce a definite amount of oil for the war program during 1944. (This program called for a daily production of a million barrels by mid-year 1944 and 1,134,000 barrels daily by January 1, 1945, and the drilling of 600 wells in Venezuela, Colombia and Trinidad—see THE OIL WEEKLY, September 6, 1943.) The operators in that area made their plans accordingly but, unlike domestic operators, have to go through so many agencies to get materials that they began to fall short of their program. The military became concerned and started action through PAW and WPB to bring the Caribbean program to as near schedule as possible during the rest of the year.

"The appeal was granted and deliveries of a limited amount of material to the Caribbean area were stepped up for delivery during the third quarter to prevent further failure of thier program. The emergency program is not a continuous program, but will disappear as soon as the limited number of emergency items are delivered.

"We frequently ask assistance of the Army or Navy in getting tractors, engines, trucks, bearings and many other tight items for domestic operators and for their support of our general materials program; but when the Army and Navy sponsor an emergency program to meet the failure of the Caribbean area in its deliveries of petroleum, their request must be carefully considered and, if justified, should be supported."

It will be noticed that Parsons confined his remarks entirely to an explanation of how the military-sponsored Caribbean program may run afoul of domestic orders. This was probably due to the fact that the Caribbean is the only large active foriegn region over which PAW has any control. There are other foreign areas over which PAW has no control, such as Russia and the operations of United Kingdom nationals in areas outside of the Caribbean. Both Russia and the United Kingdom depend upon the United States for much of their petroleum equipment, but they obtain their materials under lend-lease. Under these conditions, the President or Harry Hopkins, lend-lease head, may sign a directive diverting equipment to foreign operations without consulting PAW. Naturally, this disrupts the PAW program.

Whenever American operators are not delivered equipment because it is diverted to foreign operations, they should endeavor to ascertain whether it was sent to the Caribbean area or under lend-lease to other parts of the world. If it has been sent under lend-lease, it would be advisable to notify PAW in Washington, for the agency has been fighting against this system, and with some success. Information of this type would assist PAW in preventing too much equipment going out under lend-lease.

True Character of the Oil Pact

(An Editorial)

IF THE proposed international oil compact had a likelihood of being confirmed by the United States Senate, it probably would be the most dangerous document ever faced by the American oil industry. In view of the widespread opposition to it—majors and independents alike seem to recognize it as a plan which would quickly establish federal control—it seems unlikely that the United States Senate will ratify it. The mere possibility that the Trojan horse might be placed within our boundaries, however, warrants every possible effort to expose it for what it is and to justify every effort to defeat it.

Only a part of its pernicious possibilities have been explored in the public prints. The industry owes it to George A. Hill, an outstanding independent oil man and thinker, that the true legal character of this wolf in sheep's clothing, is exposed. It had not occurred to many, until Hill pointed it out to the oil industry that federal control can be accomplished without congressional action, simply by reason of the Senate's ratifying the pact. Incidentally a two-thirds vote in the Senate is required for ratification.

The extent of the control possible, under ratification, means price fixing with an International OPA in the saddle; it includes international proration; it threatens possible theories of operation which, if no more practical than some other things which have emanated from Washington, would have as little sense as Henry Wallace's bottle of milk a day for the Arabs; it includes a threat to American oil interests abroad through an invitation to expropriation on a grand scale and through this indicates disaster to American arms if we should engage again in a global war; it sets a precedent by which the cartel system, diametrically opposed to the American concept of business under regulated competition, may be imposed on other businesses.

Whether Edward R. Stettinius, Jr., of the State Department, and his "petroleum advisor," Charles B. Rayner, recognized all of these dangers and sponsored the deal, or whether, as may be more likely, they failed to recognize them, we do not know. Certainly the petroleum advisor, if he were capable of advising our State Department on matters of oil, should have recognized most of them. Certainly they would have been called to his attention before the last moment of the negotiations if he had asked for the opinions of the oil men who were designated to advise with him. Probably we should not blame Rayner because possibly he found that expert opinion was not wanted. As to Rayner's qualifications as an expert adviser on world petroleum affairs we refer you to his record of training and experience as provided by the State Department itself (THE OIL WEEKLY, April 24, 1944.)

Of course the whole thing is a great deal bigger than any one man or set of men. But it shows the danger of wholesale planning by those not equipped for the task.

Strangely enough, there seems to be no unanimity of feeling regarding the

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compact among our British friends, although they probably have less need to worry than we because their government has consistently sought and used the advice of the leading oil men of Britain in its official dealings. The editor of the *Manchester Guardian*, one of England's influential newspapers, is suspicious of the deal and of its effect on Britain's interests. He is afraid that American high prices of oil (there is a chuckle in that) may be imposed upon England and the world. He is afraid that the pact represents an "American steamroller victory."

There may be some who will argue that if representatives of both sides of the Atlantic fear the deal, that is a good sign that it is a pretty fair document. However, if two neighbors, ordinarily of highly divergent views, both fear a burglar that is no sign that the burglar is not around and should not be guarded against.

Every American operator, every employe of an oil company, has a stake in the matter and to make sure that the Senate is fully aware of the dangers involved, THE OIL WEEKLY suggests that oil men acquaint their senators with their views without fail. Unquestionably there will be further action by groups of oil men through resolutions against the proposed pact. Elsewhere in this issue of THE OIL WEEKLY will be found news report of resolutions already adopted but individual communications to Senators should be added to the resolutions addressed to them.

Synthetic Crystals Used in Industry

RECENTLY developed synthetic optical crystals, through their quality and size, have stimulated the design and construction of infrared equipment heretofore considered impossible. As a result, research and control instruments are available which play a pivotal part in the production of synthetic rubber, aviation motor fuel and other products. At least one large oil company is known to have made use of the crystals in connection with geophysical infrared spectroscopy.

Because of the development of a large scale growing process, these crystals are now being produced commercially.

Our company, like most American companies, believes in a fair and free competition in business.
—RALPH W. GALLAGHER, president
Standard Oil Company (New Jersey)

Peak Demand for Oil Products Now Here

IF THE European war ends within a few months as anticipated, peak military requirements for petroleum products probably are at hand now. This has been mentioned previously in these columns, but the first definite indication that such was the case occurred last week, when PAW cut back production allocations from September peaks to the level of August.

This probably means that the industry will immediately be confronted with the problem of adjusting itself to conditions that will exist in the interim between defeat of Germany and Japan. What are the prospects?

There still will be the war with Japan, but it will constitute only one war instead of two. Last spring military leaders stated 1¼ million barrels of petroleum products were being sent overseas to battlefronts daily. Since that time demand has increased by about 250,000 barrels daily. Nothing has occurred to cause such a growth in domestic industrial or civilian requirements, so it can be assumed that this increase has resulted from military needs, due primarily to the invasion of France. Therefore, we probably are shipping 1½ million barrels of oil overseas to battlefronts at this time.

On the basis that we will be fighting only one war instead of two, it would appear that military consumption in the interim between the defeat of Germany and the defeat of Japan would be but half of current needs, which would mean a decline of ¾ million barrels daily.

However, the decline may not be so large. Both Navy and Merchant Marine ships are expected to be used to their fullest extent, and consequently consumption of residual fuel oil should remain at its current record level. For this reason, it is generally predicted that military oil consumption will not decline more than 40 percent, which is the same percentage drop foreseen by WPB in requirements for manufacture of war implements. This would mean a loss of 600,000 barrels daily in military consumption.

However, this decline in military use may be partly offset by increased civilian consumption. Whatever reduction occurs in military use will consist primarily of motor fuel, because land forces are not expected to play as important a role in the Pacific area as in Europe. Consequently, additional gasoline consumption by civilians is probable, and already OPA and other agencies are studying this possibility.

Relaxation of rationing, however, can be applied only to the area outside of the West Coast, for as long as there is fighting in the Pacific every drop of petroleum in that region will be needed for military purposes. If motorists now operating cars outside the West Coast were to return to normal prewar consuming rates, they would use only 375,000 barrels more per day than currently. But no such civilian increase can be anticipated, for it will be necessary to continue to conserve the life of cars, due to poor mechanical conditions, worn tires, and prospects that it may be some time before enough new cars are manufactured to permit the nation, as a whole, to return to normal driving. The increase in civilian gasoline consumption is more likely to be in the neighborhood of 50 percent of this amount, or roughly 200,000 barrels daily. Relaxation of civilian use of heating oils may cause another 50,000-barrel per day increase. This would raise total civilian consumption to a point 250,000 barrels above present rates, which, however, would fail by 350,000 barrels to offset a decline of 600,000 barrels in military requirements.

Nazi Defeat to Slash Texas' Oil Output

SHOULD a 350,000-barrel per day decline in consumption occur when Germany is knocked out of the war, less United States crude oil would be required. The impact would fall almost entirely upon Texas producers. Probably 300,000 barrels of the 350,000 barrel decline would occur in Texas. California, of course, would be called upon to produce all it could to fulfill Pacific military requirements. Only minor curtailment will take place in Louisiana, New Mexico, Kansas and Oklahoma.

A drop of 300,000 barrels per day in Texas crude oil production would lower the state's production to 1,850,000 barrels daily. However, this would still be about 475,000 barrels more than the state produced in 1941.

Such a decline is not expected to result in any major adjustment problems for the industry, even in Texas. Because of the heavy drain excessive producing rates have imposed upon reserves, some decline should be welcomed. Furthermore, the producing ability of the state may have declined by almost this amount within another year.

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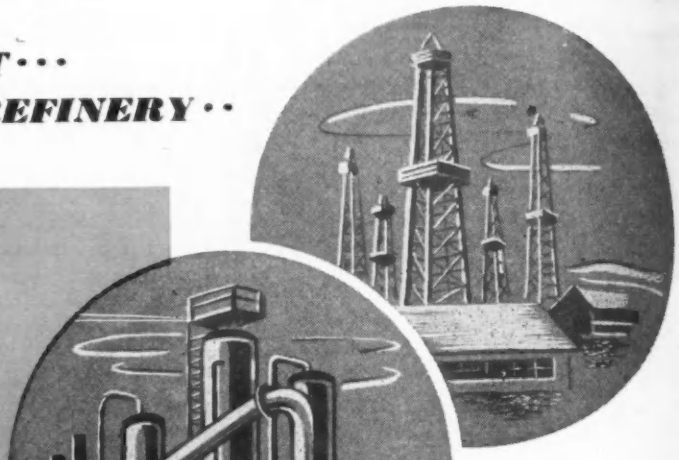

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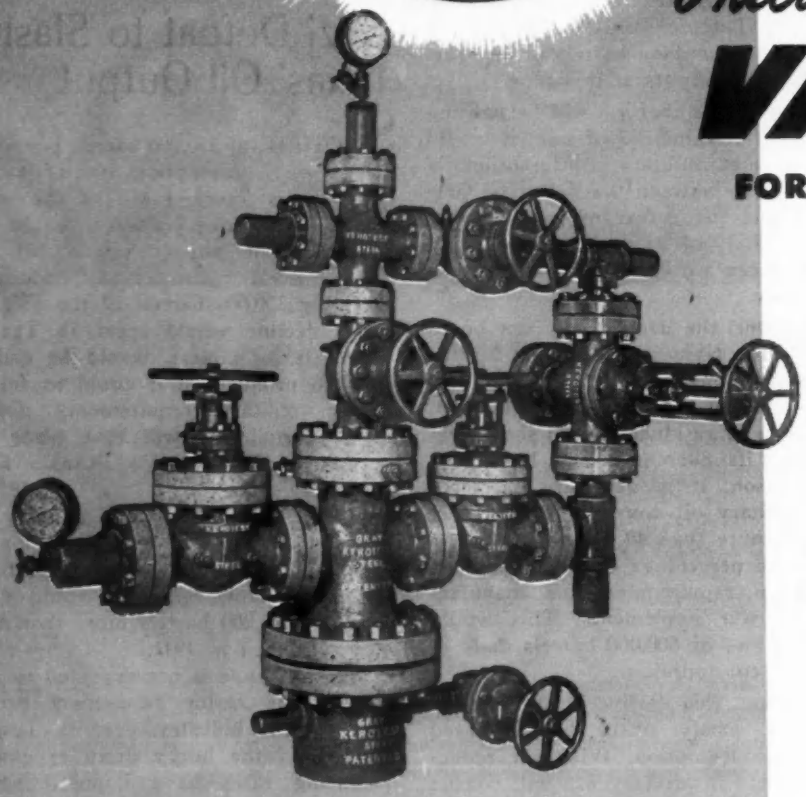

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WASHINGTON ROUNDUP

By BERTRAM F. LINZ, Washington Correspondent

FOR the first time since last February, the upward trend of oil production will reverse next month when daily production of all petroleum liquids will drop to 5,010,800 barrels from 5,051,300 barrels certified for September.

Oil Production to Drop—PAW certifications for the coming month show that crude production will drop by 47,700 barrels daily, while output of natural gasoline and condensate will increase 7200 barrels. For the most part, the cut-backs are aimed at restoring some excessively-worked fields to more nearly their maximum efficient rates of production.

Other Activities—There were no other oil developments of major importance in the national capital last week, but there were activities in various quarters which will exert influence on future operations.

Surplus Property Disposal—The surplus property disposal bill was passed by Congress and sent to the White House for approval, with no mention of reservations of oil or mineral rights in surplus lands offered for sale and carrying authority for five-year leases of government plants by the three-man board which will administer the law. Surplus lands are to be offered first to their original owners or tenants before being offered for general sale. Special reports on plans for the disposition of government synthetic rubber and aviation gasoline plants and pipe lines are to be sent to Congress, with 30 days in which to act on them, before final action may be taken.

Grain Alcohol-Rubber Plants—Permanent operation of the grain alcohol plants for synthetic rubber production was recommended by a Senate subcommittee, which suggested that the government investment in those plants and its $150,000,000 in plants for the production of butadiene and styrene from grain alcohol be written off and the plants operated on grain bought by the government as surplus, thus affording production of synthetic rubber at low prices.

Rebuilding of Allied Industry—Europe's wrecked industries are not to be rebuilt at the expense of the Allied nations, whose contribution to the rehabilitation of Europe and the Far East will be confined to the furnishing of relief needs and some machinery and equipment for repair of plants—at the expense of the new governments in all cases where they have assets and free only in the case of destitute nations, such as Greece.

Transportation Taxes—Elimination of all taxes on transportation, including those on lubricating oil and pipe line movements, was recommended in the final report of the board of investigation and research as an aid to the reconversion of transportation after the war. (See page 66.)

Picking Shale Sites—Also preparing for postwar activities, the Bureau of Mines announced that it is about to select the sites for the plants in which commercial production of liquid fuels from coal, shale, etc., will be worked out.

Oil Pact Opposition—Reports are coming to Washington of aggressive opposition to the Anglo-American oil agreement which will be considered after election by the Senate committee on foreign relations before going to the Senate for possible ratification. Texas oil operators urged its defeat in a measure that passed without a dissenting voice.

Ingleside Injunction—Federal Judge Atwell of Dallas ruled with the Humble Oil & Refining Company in its petition for injunction against several federal agencies which, it claimed, were about to take over its Ingleside, Texas plant for operation.

Texas Oil Operators Oppose Senate Ratification of Anglo-American Pact

Texas oil operators meeting in Austin last week in connection with the statewide hearing voted without dissent to recommend that the United States not give its consent to the ratification of the Anglo-American oil agreement.

Beauford Jester, chairman of the Texas Railroad Commission, who was asked by operators to preside at the get-together, was authorized to name a committee to study the matter further and see that proper representations are made to the Senate, this to include evidence by members of the Texas Commission. Jester selected Grady Vaughn of Dallas as chairman of this committee. Other members, Jester said, would include 15 to 20 independent oil men, representatives of all major companies, members of the directorate of state schools which have oil interests, bankers active in oil financing, and representatives of women's organizations.

The pact was opposed largely on the grounds that it is one which would be enforced by law rather than one which is permissive. All three railroad commissioners expressed opposition to the measure, Olin Culberson wanting no agreement at all and contending that monopolies are no more conducive to public welfare when handled by government than when handled by private enterprise. Ernest O. Thompson said it did not provide permissive cooperation only, which is the plan followed by the Interstate Oil Compact Commission.

Jester was called upon to report on his recent visit to Washington, where he conferred with PAW officials, representatives of industry and members of the Senate concerning the agreement, which he characterized as a treaty which would have the effect of law.

Federal Control Feared

It was condemned primarily because under its provisions, all United States production, both crude and refined products, must be controlled by the federal government if world markets are to be divided with Britain and other powers.

Jester said that while no other country had been included in this agreement, agreements with others were expected by the State Department.

The commissioner said that the plan was originally urged as a means of protecting foreign concessions owned by major companies, protecting these companies from loss of their investment. Some companies thought the plan might prevent flooding of the United States with foreign oil.

Paul McDermott, attorney for Sinclair interests, attacked the measure because it will require price fixing as well. He feared this treaty points toward

It now develops that Harry Fraser, counsel of the Maloney committee of the United States Senate, on August 14, rendered an opinion to the chairman of the Senate Foreign Relations Committee in which he pointed out in effect that the proposed Anglo-American oil compact could impose federal control of the oil business without benefit of joint action by the Congress, simply by a two-thirds vote favorable to the pact as a treaty in the Senate. Ten days later President Roosevelt, in the face of this report to the Foreign Relations Committee, submitted it to the Senate with the request that it be ratified.

Congress heretofore, despite heavy Administration pressure, has refused to grant peacetime federal control of the oil business, something that would be gained if the Senate by a two-thirds vote ratified the Anglo-American oil agreement.

world-wide proration, based on reserves. Demand estimates, he said, are to be prepared by the International Commission.

Companies would be forced to supply this Commission with their plans for present and future, and on these, the allocations would be based. Since no one else would have all the information, allocations could not be questioned.

Text of Resolution

Text of the resolution follows:

"RESOLVED:

The oil producers of Texas object:

1. To the use of the treaty-making device inherent in the Anglo-American petroleum agreement to vest in the Congress, or the Executive Department of the United States government, or an International Oil Commission, powers in time of peace not now vested in the federal government under our constitution

(a) To fix production quotas in the oil producing areas of the world, including the United States, and the several oil producing states; and

(b) to make market allocations throughout the world; and

(c) to fix prices of oil and its products, or price ceilings, or what may be deemed "fair prices"; and

(d) to take jurisdiction over conservation regulations by making determinations of "sound engineering practices" to be effectuated by Federal Law or International agreement; and

(e) to regulate our domestic oil business in relation to the economic advancement of foreign oil consuming or foreign oil producing countries; and

(f) to surrender the control of import regulation and duties on foreign oil importations while the United Kingdom preserves "imperial preferences"; and

(g) to vest in an international oil commission the determination of "peaceable" and "non-peaceable" countries as the basis for eligibility or banishment from international trade in oil, irrespective of whether our nation is otherwise on friendly terms and enjoys amicable relations with such nations; and

(h) to regulate "the production, processing, transportation, and distribution of petroleum" in the United States (except as to the now recognized constitutional regulation of transportation interstate and foreign commerce); and

(i) to legalize cartels; and

2. The oil producers of Texas recommend that the Senate of the United States do not give its advice and consent to the ratification of the Anglo-American petroleum agreement submitted by the President on March 24, 1944."

Houston Operators Express Opposition to Agreement

With the purpose of crystalizing opposition to the Anglo-American oil pact, 21 Houston independent oil producers formed a committee headed by Glenn McCarthy and objected to the proposed agreement as:

1. Imperiling the existing American constitutional system of preserving to the states the jurisdiction over conservation regulations.

2. Striking at the system of free American enterprise as the basis of oil industry operations.

Interstate Commission To Study Oil Agreement

Petroleum authorities will discuss the British-American oil agreement and the return to the states of regulative powers before the Interstate Oil Compact Commission in Oklahoma City, October 5, 6, and 7.

Dr. Joseph E. Pogue, vice president and petroleum economist, Chase National Bank of New York City, will give a paper, "The Purpose of an International Oil Agreement."

Ralph T. Zook, Bradford, Pennsylvania, IPAA president, will discuss "Foreign Oil and the Anglo-American Oil Agreement."

The cartel will be further explored by Russell B. Brown, Washington, general counsel for the IPAA.

Beauford Jester, Austin, chairman of the Texas Railroad Commission, will speak on "Congressional and State Action—The Hope for State Regulation of Oil and Gas and the Preservation of States' Rights."

Zook Suggests Different Sort of Pact in Presenting His Objections

Consummation of a new Anglo-American agreement "which will allow the two nations to sit across the table and discuss postwar oil problems so that a situation will not develop in the world market which would have serious repercussion in our domestic market" is favored by Ralph T. Zook, president of Independent Petroleum Association of America.

"The oil reserves of the Near East and South America are reported to be such that this country can readily have a flood of cheap foreign oil knocking at its door which will require every ounce of energy of the independent producer to keep from being imported," Zook said. "A permissive agreement dealing exclusively with oil in international trade, with power to make recommendations only, could keep such a situation from developing."

Zook said the oil pact would come up for complete discussion at the IPAA directors meeting in Dallas October 9-11. He also expects to discuss it at the Interstate Oil Compact Commission session October 7 and will appear before the Senate foreign relations committee outlining his views against confirmation of the agreement to which he has listed the following objections:

Objections Enumerated

1. It is not clearly limited to oil in international trade irrespective of how or where originated.

2. It should explicitly state that there is no abrogation of the power of Congress to control the importation of natural resources, and that nothing in it shall be construed to give authority to change the existing taxes and restrictions on the importation of oil. To the contrary, the agreement states, "That such supplies should be available in accordance with the principles of the Atlantic Charter" which document I interpret enunciates the principles of free trade.

3. The membership of the Commission is not adequate to give proper industry representation and the same results cannot be accomplished by advisors to the Commission.

4. The powers of the Commission are not limited to advisory.

5. The wording can be construed to mean that the terms are compulsory instead of permissive as they should be.

6. It can be interpreted to give the government of the United States control over domestic production and which would interfere with the control by the States of their oil and gas resources.

Zook was one of the ten advisors to the State Department and as such made verbal objections to many of the provisions of the pact. These were confirmed May 5, 1944 by letter, he said.

Jennings Named President Of Socony-Vacuum Company

B. Brewster Jennings, a director of Socony-Vacuum Oil Company, Inc., and manager of the firm's transportation activities, has been named president and chairman of the executive committee, succeeding the late John A. Brown.

Harold F. Sheets, vice president, has been chosen chairman of the board, a position vacant since 1935.

Jennings, 46, returned August 1 from a leave of absence during which he had charge of tanker operations for the United States Maritime Commission and subsequently for the War Shipping Administration. He has been with the company since it was formed in 1931 after 11 years with Standard Oil Company of New York. He has been a director since 1937.

Sheets joined the Vacuum Oil Company in 1907, and for a number of years lived in Paris, where he handled the company's business in France, Spain, Italy, Germany, Belgium and Holland. He became a vice president in 1931.

35-cent Price Hike and Retention of Depletion Allowance Urged on Solons

Retention of the depletion allowance and a 35-cent crude price hike were urged by oil operators in Austin last week before the House subcommittee on small business. Chairman Wright Patman conducted the hearing and Representatives Estes Kefauver, Tennessee, and Evan Howell, Illinois, also attended.

Members of the Texas Railroad Commission condemned the Anglo-American agreement as a threat to the independent producer. This threat arose, they said, from the fact that production of wells in this country must be curtailed as foreign oil is brought in. That foreign oil would be brought in, is entirely likely, they felt.

The commissioners declared there has been no increase in the crude oil price for several years during which operating costs have increased substantially. Because they could sell as much oil as they could produce, the independents have been able to meet the increase in costs out of oil already discovered. However, when this is gone, their profits will be insufficient to cover replacement stocks.

Realizing this, many independents have gone out of the business, and since they are the ones who do most of the wildcatting, according to the commission, there will be a decline in that field, and new oil will not be discovered.

Several witnesses declared the price could be increased 35 cents without raising the price of refined products. No refiners appeared, but several sent telegrams and asked to file briefs showing that an increase in the price of crude must be followed by an increase in the price of refined products. The producers pointed out that while the crude is the same at the same old price, the refined products, offered now at retail, are inferior to those offered heretofore.

Several witnesses expressed the opinion that an increase of 35 cents in the price would merely offset increases in costs, which will become apparent when production is reduced. That it will be reduced soon was indicated by lower demand apparent at the recent statewide proration hearing in Austin.

Merle Becker, vice president of W. C. McBride, Inc., St. Louis, thought conditions call for a price increase of 63 cents a barrel, if the independent is to survive and find more oil.

He pointed out that while United States production increased 102,000,000 barrels in 1943, the production of only 20 companies increased 105,000,000 barrels per day. This indicated to Becker that the majority of the companies had lower production than the year before.

The committee seemed impressed with the testimony of such independents as Sid Richardson of Fort Worth, George Livermore of Midland, and Al Buchanan of San Antonio, who said labor costs have gone up 50 to 100 percent. Livermore testified some of his drillers make $800 a month, and roughnecks as much as $600 per month. The cost per day of operating a drilling rig has risen from $131.32 in 1938 to $225.74 in 1944, according to Buchanan.

The proposed Glasco pipe line from the Permian Basin to California was injected into the hearing. Glasco testified concerning the refusal, which he received from PAW and presented facts compiled to show that every objection of PAW had been met.

Patman asked Russell Brown, attorney for the I.P.A.A. who testified, when an increase was last requested from OPA or the economic stabilizer. Brown said it was two years ago.

Patman suggested that the present might be an excellent time for the industry to introduce another plea, but Brown said operators feel that their only prospect for relief is from Congress.

Alton Jones Chosen to Head District 1 Group

Appointment of W. Alton Jones, president of the Cities Service Oil Company, as chairman of the general committee for District 1 to succeed the late John A. Brown was announced September 18 by Administrator Ickes.

"Mr. Jones' outstanding performance as chairman of the industry's transportation committee and his many other services in connection with the war program make him the logical choice to succeed to the chairmanship of the important District 1 general committee," Ickes said.

OPA Talks Plan for High-Cost Operators

Representatives of all classes of producers met with Price Administration officials last week to discuss plans for taking care of high-cost operators, and the procedure to be followed is expected to be announced shortly.

Most of the discussion centered around the type of information to be required by OPA and the manner of its collection and presentation. Pool committees are expected to handle most of the work.

Rubber Survey

An exhaustive report on rubber, both synthetic and natural, is being prepared by the Tariff Commission and will be issued next month. The survey is declared by Commission officials to be the most important of some 50 studies which are now being made on that many major commodities.

The rubber report will cover the prewar position in international trade, costs and factors of cost of both synthetic and natural rubber, and probably will be projected into the postwar era.

Olds Vice Chairman

Leland Olds, chairman of the Federal Power Commission from January, 1940, to last June, will serve as vice chairman during the remainder of this year under Basil Manly, last week elected chairman for the period ending June 22, 1948, when his term will expire.

Bureau to Survey Sites For Synthetic Oil Plants

The United States Bureau of Mines has announced intention soon to send engineering parties into the field to survey more than 150 sites which have been proposed for synthetic liquid fuel laboratories and demonstration plants which will conduct a five-year program of research and development authorized by Congress several months ago. Sites have been proposed in nearly all coal-producing regions but other factors than raw material supply will be considered, it was indicated. Investigations have been made of potential oil yield of 14 coal beds and that work is continuing. Under the plan, coals from all sources will be given commercial-scale tests.

Six Month Limit Placed On Priorities Authority

Petroleum operators obtaining priorities assistance to buy materials to be used in operations outside the United Sta. - or Canada hereafter will be required to exercise their authorizations within six months from the date of issuance of the export license or release certification, under a new direction to Priorities Regulation No. 9 issued by the War Production Board September 20. PAW officials explained that the priorities assistance is revoked automatically unless used within the six-month limit.

The amended priorities regulation establishes a flexible system which can easily be adjusted and revised without difficulty as the materials situation improves. It was explained by Deputy Administrator Davies, who pointed out that the volume of paper work required of applicants and users will be considerably reduced.

The new procedure, he said, closely parallels that recently established for the domestic industry through the amending of P-98-B.

UNRRA and Industries

The United Nations, at this time at least, have no intention of rebuilding the world's industries ruined by the Axis powers, it was made clear last week by the United Nations Relief and Rehabilitation Administration.

Repair parts and machinery will be provided for factories, not destroyed, raw materials will be provided to get them into operation and a few shiploads of oil and coal may be provided to get operations under way again, but UNRRA will not resurrect the leveled cities nor rebuild the demolished industries of Europe or the Far East.

Grain Alcohol Method Urged by Subcommittee

Maintenance of maximum production of synthetic rubber from grain alcohol was recommended to Congress September 19 in a report of the agriculture subcommittee investigating the expanded utilization of farm products.

The subcommittee pointed out that the government has invested $150,000,000 in plants for the production of butadiene and styrene from grain alcohol, millions more of public funds have been invested in grain-alcohol plants and the government is obligated to purchase $2,000,000 worth of surplus grain in the next few years.

PAW Cuts Production 40,500 Barrels Reversing Six-Months Upward Trend

Reversing a six-months' upward trend, production of petroleum liquids in October will decline from the September level by 40,500 barrels daily under certifications announced by PAW September 21.

A daily production rate of 5,010,800 barrels was set for the month as compared with 5,051,300 barrels for September.

A decline of 47,700 barrels daily of crude oil will result from a cut-back of production from 4,756,200 to 4,708,500 barrels, while output of natural gasoline and condensate will increase from 295,100 to 302,300 barrels.

As compared with current PAW certifications, crude production next month is due to decrease in 11 states, remain unchanged in seven, and increase in only two.

Nearer "Efficient" Figure

Except in District 4, the cut-backs were ordered to bring production more closely in line with efficient maximum capacity, exceeded in past months in a number areas due to war need for products. The changes in District 4 were ordered to bring production in line with transportation facilities expected to be available. District 5 continues to exceed maximum efficient rates of production in some areas. Although there has been an increase in productive capacity through new development well completions.

The heaviest reduction in total output will be in Texas, where a decrease of 25,000 barrels daily was explained by Deputy Administrator Ralph K. Davies as "in line with actual requirements based on available transportation and refining facilities."

Cut-backs in crude were ordered in all three District 1 states, New York dropping from 13,800 to 13,500 barrels daily, Pennsylvania from 42,100 to 41,500 barrels, and West Virginia from 9000 to 8500 barrels.

In District 2, production rates will remain unchanged for Kansas at 274,000 barrels daily, Kentucky, 25,000 barrels, and Nebraska, 1000 barrels. Illinois was cut from 210,000 to 205,000 barrels, Indiana, 14,000 to 13,500, Michigan, 51,000 to 50,000, Ohio, 9300 to 9000, and Oklahoma, 344,000 to 340,000.

One of the two states to receive increases, Mississippi production was boosted from 45,000 to 46,000 barrels, while Texas output was cut from 2,163,000 to 2,133,000 barrels. The other District 3 states being unchanged are Arkansas at 78,000 barrels, Louisiana, 350,000 and New Mexico, 110,000.

Colorado Up

The other increased state was Colorado, raised from 8000 to 8500 barrels, but the rest of District 4 was cut back. Montana was cut from 24,000 to 22,000 barrels and Wyoming from 100,000 to 95,000 barrels. California production was left unchanged at 885,000 barrels.

Production rates for natural gasoline and condensate were increased in nine states and left unchanged in the other six, the estimated production being as follows:

Pennsylvania, 1200 barrels daily against 1000 barrels this month, West Virginia, 6100 barrels against 5400 barrels, Illinois, 12,100 barrels against 12,000, Kansas, 6000 against 5700, Kentucky, 2800 against 2700, Michigan, 500, unchanged, Ohio, 400, unchanged, Oklahoma, 26,800, unchanged, Arkansas, 5000 barrels against 4900, Louisiana 35,000, unchanged, New Mexico, 5500, unchanged, Texas, 145,000 against 140,000, Montana, 300, unchanged, Wyoming, 3300 against 3200, California, 52,300 against 51,700.

Oil Production Continues At Record High Level

United States crude oil production continued in the week ended September 23 close to the record high level of the week before, having averaged 4,729,485 barrels daily, a decrease of 2845 barrels, reports to THE OIL WEEKLY revealed.

California declined to 865,750 daily from 875,000 the week before, and Illinois to 194,800 from 204,800, but those decreases were largely offset by small increases in several other states. Mississippi rose to 49,000 daily from 43,550, Oklahoma to 342,900 from 341,200, and Wyoming to 98,850 from 89,100. Texas was practically unchanged at 2,156,050, Kansas averaged 280,900, up slightly, and Arkansas and New Mexico reported 81,350 and 106,100 respectively.

Crude Oil Production in the United States

(Estimates compiled by The OIL WEEKLY. All figures indicate daily averages, in barrels.)

STATE OR DISTRICT	PRODUCTION IN WEEK ENDED Sept. 23	Sept. 16
Alabama	350	300
Arkansas	81,350	81,150
California	865,750	875,000
Colorado	9,450	8,650
Florida	50	50
Illinois	194,800	204,800
Indiana	12,200	14,800
Kansas	280,900	279,600
Kentucky	24,400	24,500
Louisiana	363,000	362,500
North Louisiana	74,600	73,700
South Louisiana	288,400	288,800
Michigan	50,100	50,200
Mississippi	49,000	43,550
Missouri	100	100
Montana	22,600	23,700
Nebraska	600	600
New Mexico	106,100	106,300
New York	13,600	13,400
Ohio	8,500	8,200
Oklahoma	342,900	341,200
Pennsylvania	40,000	39,700
Tennessee	35	30
Texas	2,156,050	2,156,300
Upper Gulf Coast	543,000	543,000
East Texas Field	370,900	371,000
Rest of Eastern Texas	149,800	149,800
Lower Gulf Coast	243,250	243,300
Southwest Texas	79,050	79,100
South Central Texas	19,300	19,400
West Texas	504,150	504,100
North Texas	147,850	147,800
Panhandle	98,750	98,800
West Virginia	8,800	8,600
Wyoming	98,850	89,100
Total United States	4,729,485	4,732,330

Texas Allowable for October Cut Slightly

Texas Railroad Commission has fixed October's net allowable at 2,304,650 barrels daily. After deductions for under production and addition of 147,700 barrels of distillate the commission estimated that Texas during October would produce 2,281,813 barrels daily, 3813 barrels more than PAW's request. The allowable for September was 2,311,718 barrels.

Nominations by purchasers for 2,336,122 barrels were higher by 2000 barrels than for September but despite this it appeared that the demand for Texas crude is on the decline. PAW ordered a cut of 30,000 barrels of sweet oil and West Texas operators asked for a cut of 20,000 barrels in Yates, Slaughter and Wasson.

An increase in the average pressure of the East Texas field amounting to 1.64 pounds during August indicated that the field might continue producing at its current rate without a pressure drop. H. P. Nichols, representing East Texas royalty owners, wanted only 23 days production.

The fields generally are to produce 24 days during the month, including East Texas. The Panhandle is exempt from shutdowns.

The next statewide proration hearing is set for October 18.

19,000 Barrels Is Daily Production in Elk Hills

Twenty new wells in the Navy's Elk Hills, California, petroleum reserve out of 300 projected are producing more than 19,000 barrels of oil a day, 11th district Naval officials announced. Sixteen drilling units are at work and production is to reach a maximum of 65,000 barrels shortly.

Com. Victor H. Wilhelm, inspector of naval petroleum reserves in California, said that four companies under contract to the Navy will process an anticipated 2,500,000 barrels of crude during the last half of 1944. They are Union Oil Company of California, Shell Oil Company, General Petroleum Corporation of California, and Mohawk Petroleum Corporation.

Producing Oil Field Is Located in Great Britain

An oil field consisting of approximately 300 wells with sizable production has been developed in Great Britain, press dispatches disclosed last week. Commercial exploitation was not regarded as feasible until German submarines began playing havoc with allied tankers and then Britain, needing oil at any cost, undertook development. Experienced Americans did the initial work but later British nationals took over. The field is said to be nine miles in length.

Location and output cannot be given until military censorship is lifted.

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A. J. AKEHURST, petroleum engineer with Caribbean Petroleum Company at Maracaibo, has completed a three-month vacation in Canada and is in West Texas looking over drilling operations before returning to Venezuela.

Seizure of Humble Plant Blocked in Court Test of U. S. Intervention

In an opinion finding "all the equities" and "the public interest" to be with Humble Oil & Refining Company, Federal Judge William H. Atwell, September 21, at Dallas, enjoined the federal government from seizure of Humble's refinery at Ingleside, Texas.

This particular case differs from others throughout the nation on the issue of government intervention, in that it is the first to be tried since the national WLB decision requiring all plants to accept a maintenance of membership clause in union contracts, and also in that there were no labor troubles in evidence at the time of the alleged threatened seizure.

The refinery is operating at capacity, manufacturing war products, and the court found that while the safety of the war machine does not rest entirely with the Humble company, it is at least partly with them, and that "no harm can come by restraining the defendants. Serious harm might come if a temporary injunction were not granted."

Testimony presented by Humble showed that the plant was being operated in keeping with a long-established policy of non-discrimination for or against any employe for reason of membership or non-membership in unions, and that there had been no labor disturbance or threatened disturbance—the only grounds upon which the plant could legally be taken over by the federal government or its agencies. Humble had failed to comply with an order by the national WLB instructing them to include the maintenance of membership clause in its contract with the CIO, and charged that sanctions had been imposed by the WLB in the form of refusal to process applications for wage increases for Humble employes in plants at other locations.

After Humble obtained its temporary restraining order, WLB then started and processed all the pending applications, it was revealed.

Sanctions Imposed

Attorney Frank B. Potter for the government, told the court that the national WLB had informed the regional board it was in error in failure to process applications and had moved to correct its fault. In his opinion Judge Atwell said: "The testimony drives the court to find as a fact that unlawful and illegal sanctions were imposed. Such sanctions were being carried out. Threats were made to seize the plaintiff's property at Ingleside.

"Those who claim a refuge in Washington, in certain marked instances, communicated with the agents, or, with the plaintiff in Texas . . . . they, likewise came into Texas. They declined to talk of the merits of the order with reference to the sanctions that had been imposed. They demanded immediate compliance by the insertion of a membership clause in the war contract . . . They were in a position of power. They were advisors of the President . . . They may not be excused, or said to be harmless, nor said to be beyond the reach of a court of equity, because the ultimate and final decision would come from the chief executive of the nation . . . That the man does not mean to shoot who holds the gun, may not be a defense for his illegal act."

Replying to Potter's motion for dismissal on the ground that the National War Labor Board, Petroleum Administration for War, Economic Stabilization Director Fred M. Vinson, and others named in the suit are not subject to the jurisdiction of the court, Judge Atwell said: "Injunctive restraint must be observed by the whole world . . . Equity is not a weakling. It is a strong, well-matured, thoughtful, all-seeing, careful protector against turmoil and disturbance and destruction of the citizen's rights, liberties, and freedoms."

In answer to the defendants' assertion that the plant "might or might not" be seized, Judge Atwell commented: "The mere statement of that position at the bar of a court of equity surprises. As has already been indicated, the citizen, as well as the court, has long since learned to treat a threat, which is believed to be for the execution of some act which is illegal or wrong, or without authority, as a sufficient basis for restraint of the person making it. Such jurisdiction is in the interest of peace and civilization. It has taken the place of the six-shooter . . . "

Government Claims

In presenting the case for the government, attorneys insisted that there had been no action, nor threatened action, to seize the plant and declared that the high national officials reportedly responsible for the threats were without power to carry them out. Humble attorneys offered transcriptions of telephone conversations which they identified as conversations of PAW representatives, letters, and other affidavits saying that armed seizure of the plant was impending.

Department of Justice Attorney David A. Turner argued that actually the government officials involved did not have the power to seize the plant; that the President would do so only as the situation warranted such action and said that such an injunction as Humble requested would interfere with the agencies' service in an advisory capacity.

When this statement was made, Judge Atwell asked: "Doesn't that rather disturb you, that a man in high position who is without power says he has that power?"

The court indicated that all the public interest issue was on the side of the plantiff, since they showed that they have no labor trouble in 19 different unions operating in their Texas plants and said that government agencies wanted the problem settled, but wanted it settled their way.

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DR. V. E. MONNETT, director of the schools of geology and geological engineering at the University of Oklahoma, has been named dean of the graduate college for two years.

WLB Ruling Causes Oil Companies Difficulties

Reports to Washington indicate that oil companies are experiencing difficulties under a July 6 WLB ruling that employers of 31 or more may not hire more than 25 percent of all persons employed for any job classification at rates in excess of the minimum of the properly established rate range for that job classification, except where an employer has had an approved plan in existence before the date of the order which provides that some percentage of employes in excess of 25 percent may be hired at rates above the minimum.

Purpose of the order was to check a general tendency toward inflation of wages by means of hiring almost all new employes at rates substantially in excess of the minimum rates approved for various job classifications.

Jobs paid only a single fixed hourly rate are not affected by the order, so that a great percentage of the jobs in the oil industry are not covered by it. However, employers who have not hired labor at the minimum approved rates for a long time have indicated that the new requirement for hiring 75 percent of all employes at the minimum rates will seriously interfere with recruitment programs. Adjustments in wage ranges have been made in many instances with the approval of the WLB, but in many cases only the approved maximum wage was adjusted while the minimum remained at its own level.

Officials in Washington suggest that if present minimum rates have not been used for some time in hiring new workers and have no significance for current operations, employers should request adjustments from the Regional WLB if it can be demonstrated that compliance with the new requirement will lead to substantial interference with necessary operations.

Much Oil Delivered in Dry Cargo Ships' Bunkers

Transportation of oil in double bottoms and fuel bunkers of dry cargo ships, a wartime innovation adopted two years ago, has permitted the delivery of more than 1,250,000 long tons of fuel to England alone, releasing 128 tankers of 10,000 deadweight tons each for other purposes, it was announced by the War Shipping Administration September 22.

This year, the WSA said, the total oil so delivered is expected to reach more than 15,000,000 tons.

Virtually every mechant ship leaving the United States now carries an excess supply of oil, bunkers and double bottoms being loaded to capacity.

Texas Severance Tax Is Due on Stripper Payments

The state severance tax is due on federal subsidies paid to operators of stripper wells in Texas, the attorney general has ruled. Opinion was based on the fact that the legislature called for payment of the price received, plus any premium. The opinion held that in providing for such taxation, the State has not infringed upon any Federal statute nor any Constitutional prohibition.

Pan American Head Sees Quick Switch To Civilian Products After War's End

Dr. Robert E. Wilson, president of Pan American Petroleum and Transport Corporation, declared in New York on September 20, that the American petroleum industry will require no more than 48 hours after it is released from war contracts to switch to capacity production of civilian products superior to those available before the war. He voiced this opinion before a meeting of the Empire State Petroleum Association and said further that unless Japan collapses suddenly, victory over Germany is not likely to result in any substantial decline in military requirements for petroleum products for a period of at least six months, due to the need for switching supplies to the Pacific theater.

Samuel E. Eckert, vice president of The Sun Oil Company, speaking at the same session, predicted that supply will be in excess of demand during the readjustment period that will occur after both Axis powers are defeated, but that "we will indeed be short-sighted if we permit this temporary adjustment situation to lure us into acceptance of government control."

Eckert called on the industry to make postwar plans on the assumption that the temporary excess of supply will soon be absorbed by increasing demands for synthetic rubber and other new petroleum products, which will add greatly to a resurgence of demand by motor cars, trucks, diesel locomotives, household burners, and other types of consuming uses. This situation, he said, will lead the industry to its greatest success.

Dr. Wilson forecasted a moderate relaxation in rationing at the end of the European phase of the war, that will offset any probable curtailment of military demand during the period required to defeat Japan. This means, he said, that the industry will be able to operate very much as at present except for some degree of relaxation of the current pressure for maximum refinery runs and maximum gasoline yields that are being obtained regardless of cost. Reduction in military demands for the first six months of all-out war in the Pacific, according to Dr. Wilson, might well average something like 300,000 barrels of high-octane gasoline daily, even after making allowance for the policing and rehabilitation of Europe.

Regarding the tanker situation Dr. Wilson predicted that it would continue to be very tight until all phases of the world-wide war are ended, and that it will represent the principal bottleneck in getting products to Pacific fronts when the West Coast replaces the East Coast as the chief base of supply and transportation.

Surplus Property Sales Compromise Bill Passed

Shorn of all provisions for the reservation of oil and mineral rights by the government in selling surplus lands, Congress last week passed a compromise surplus property disposal bill setting up a three-man surplus property board to handle disposition of all surplus war property.

While the conference committee rejected Senate provisions placing disposition of all lands other than agricultural in the hands of the Secretary of the Interior and providing specifically for the disposition of the Moore Air Field in Oklahoma to the former owners, the compromise bill stipulates that first call on surplus lands shall be given the original owner or, in the event of his death, his wife or children, who may re-purchase it at a price not greater than that paid by the government, adjusted to reflect any increase or decrease in the value of the property resulting from action by the United States, or at the market price, whichever is lower.

If a former owner's property is unavailable or is classified as suitable for a purpose different from that for which it was used when acquired by the government, the former owner may be offered other surplus real property in the same area at a corresponding price.

If the former owner or, in the event of his death, his wife or children, do not exercise the privilege of repurchase, any tenant (who was a tenant at the time the government acquired the property) shall be given the right to purchase a property.

If not sold to any of the persons specified above, surplus land is to be disposed of by an agency designated by the board which, in the case of mineral lands, presumably would be the Interior Department.

The conferees accepted a modification of the Senate provisions for handling surplus plants, providing for separate reports to Congress within a period of three months on synthetic rubber plants, aviation gas and gasoline plants, oil pipe lines and certain other facilities costing $5,000,000 or more.

The board is authorized to provide for the disposition of such plants, but cannot take final action until 30 days after the report had been made to Congress while Congress was in session, and the conference committee added a modification permitting the board to authorize any disposal agency to lease any such property for a term of not more than five years.

The conference agreement eliminated both the industry committees and an advisory council of government officials designated in the original bill.

New Gas Lines

The FPC on September 20 authorized the Consolidated Gas Utilities Corporation, Oklahoma City, to abandon 1.5 miles of pipe line in Rice County, Kansas, and authorized the company to construct about a mile of 4½-inch line in that county and 3½ miles of 8⅝-inch line in Caddo County, Oklahoma, required to serve existing customers.

The Commission also authorized the Kansas-Nebraska Natural Gas Company, Inc., Phillipsburg, Kansas, to construct 16 miles of 12¾-inch pipe line from its Stockton compressor station in Rooks County to replace an existing 6⅝-inch line.

Rowan Cites Objections To Butane Drilling Ban

Many drilling rigs would become useless if PAW bans the use of butane in development drilling rigs near natural gas sources, the production subcommittee of Petroleum Industry War Council was told in Washington by A. H. Rowan, president of the American Association of Oilwell Drilling Contractors.

Protesting the September 13 advice of the National Gas and Gasoline Division of PAW that butane will be prohibited where operations are so located that a few miles of pipe line would provide natural gas, Rowan pointed out several factors which would prevent or limit the use of natural gas. He said that unless sweet gas was available sour gas would be harmful to many engine parts which are difficult to replace; that operators would have to agree to flow their wells into separators on a 24-hour basis, as any shutdown would seriously endanger the loss of hole, which might also occur if lines laid on the top of the ground were subject to freezing, or being run over by trucks and broken. He further pointed out that many contractors were using sweet gas for economical reasons instead of using butane, the cost of which ran from $40 to $50 per day.

To Discuss Substitutes

James E. Pew, director of the Natural Gasoline Division, will meet with the drilling industry at its annual meeting in Fort Worth October 3-4, to discuss other possible substitutes for butane, including pentane, which is available in large quantities for fuel in rigs.

J. R. McWilliams, director of Production, PAW, in a letter to the Association urged that an estimate be made of the percentage of drilling rigs which would be adversely affected or removed from service because of the issuance of an order prohibiting the use of butane on any except wildcat locations by the time of the annual convention, and presented to Glenn A. Campbell who will represent the division.

Speakers Announced for AIMME Meeting October 20

Secondary recovery, production engineering, engineering research and related topics will be discussed in eight papers presented at the annual meeting of the Petroleum Division of the American Institute of Mining and Metallurgical Engineers in the Ambassador Hotel, Los Angeles, October 20.

The program follows:

"Bureau of Mines Research on Synthetic Liquid Fuels," H. C. Miller, principal engineer, United States Bureau of Mines.

"Method of Determining Amount of Well Effluents from Different Sources and Injected Gas," E. P. Valby, Richfield Oil Corporation, Long Beach, California.

"Measurement of Capillary Pressure in Small Core Samples," G. L. Hassler and E. Brunner, Shell Development Company, Emeryville, California.

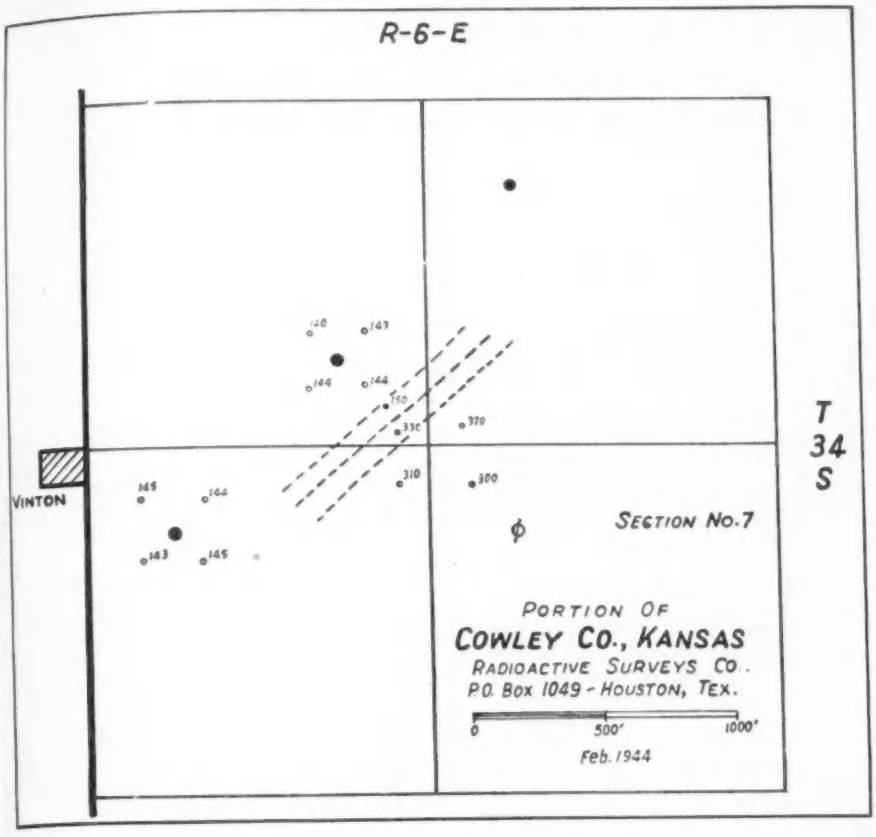
"Volumetric Phase Behavior of Oil and Gas from the Paloma Field," R. H. Olds, B. H. Sage and W. N. Lacey, California Institute of Technology, Pasadena, California.

"Average Permeabilities of Heterogeneous Sands," W. T. Cardwell, Jr., and R. L. Parsons, Standard Oil Company of California.

"A Method for Determining Fluid Movement in Wells," Sherman L. Pease, Shell Oil Company, Bakersfield, California.

"An experimental Water Flood in a California Oil Field," E. C. Babson, Union Oil Company of California.

"Water Permeability of Reservoir Sands," Norris Johnston, General Petroleum Corporation of California.



athwart or diagonally across the line of producers limits field width, a close check will preclude unnecessary dry holes in locating the occasional deviation of the productive strip from the general northeast-southwest trend. When a hole carried to the usual productive depth along the string is brought in dry, there is nothing in that result which will indicate whether the field has pinched out, or whether the apparent ending is merely a switch in direction sufficient to leave the dry hole outside the narrow zone of productivity.

A radioactivity survey prior to drilling potential extension wells, may determine the limits of a shoestring sand within allowable spacing by crossing the shoestring every 330 feet and determining the radioactive values across the sand. Stations around production check very closely, while a jump in value, often doubling the reading at the sand, indicates the edge of production and thus limits profitable drilling paralleling the line of producers. Should the shoestring waver or deviate from its apparent course, the extension of the surveys at right angles to known trend will sooner or later pick up comparable values to those in the proven area, indicating by the break or jump in values

FIGURE 1

At left—Surveys across the trend of a shoestring pool, with values based on those obtained adjacent to productive well, enable the plotting of production contours and eliminate the need for drilling dry offsets. The dry hole in Section 7, lying well outside the edge of production, bears out previous showing of survey.

Radon Emanations Outline Formations

By ELTON STERRETT
Staff Writer

THE wider use of radon emanation evaluation over the past 18 months has pointed out additional types of geological conditions where the survey may be used advantageously, either alone or in conjunction with other types of subsurface exploration for oil. This holds true even though radioactivity at the earth's surface has not been developed to the point where it may be determined absolutely and the findings used to indicate the presence or absence of oil beneath the surface.

Equipment used for such determinations today differs little from that first adapted to collect or sample radon emanations, the improvement being in interpretation of findings, and in the greater background of correlative data on which predictions can be based.

Defining Shoestring Pools

In the shoestring type of oil accumulation, best exemplified by many Kansas pools, where a single row of wells, with perhaps an occasional double set

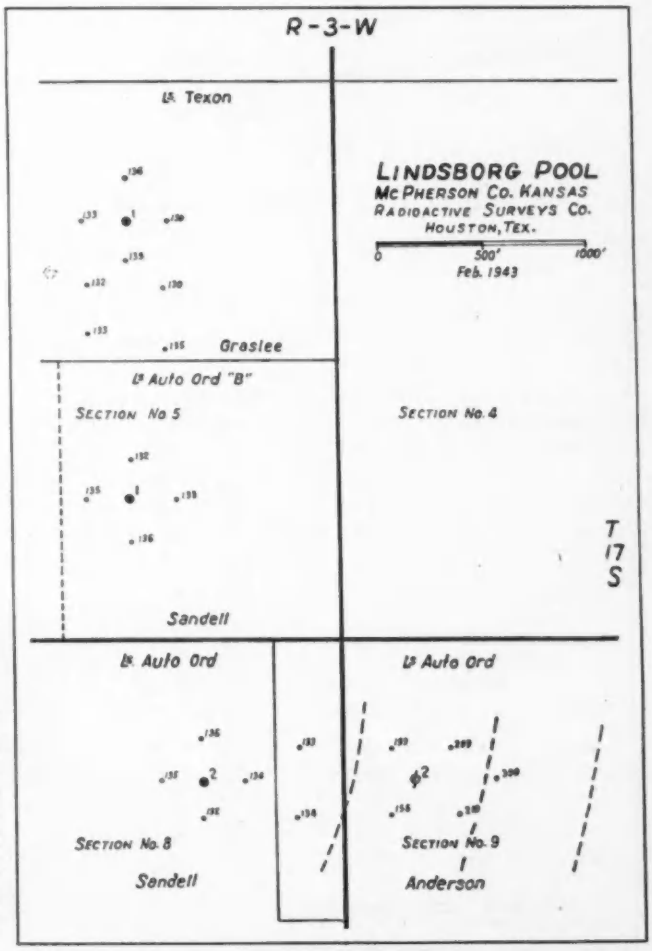
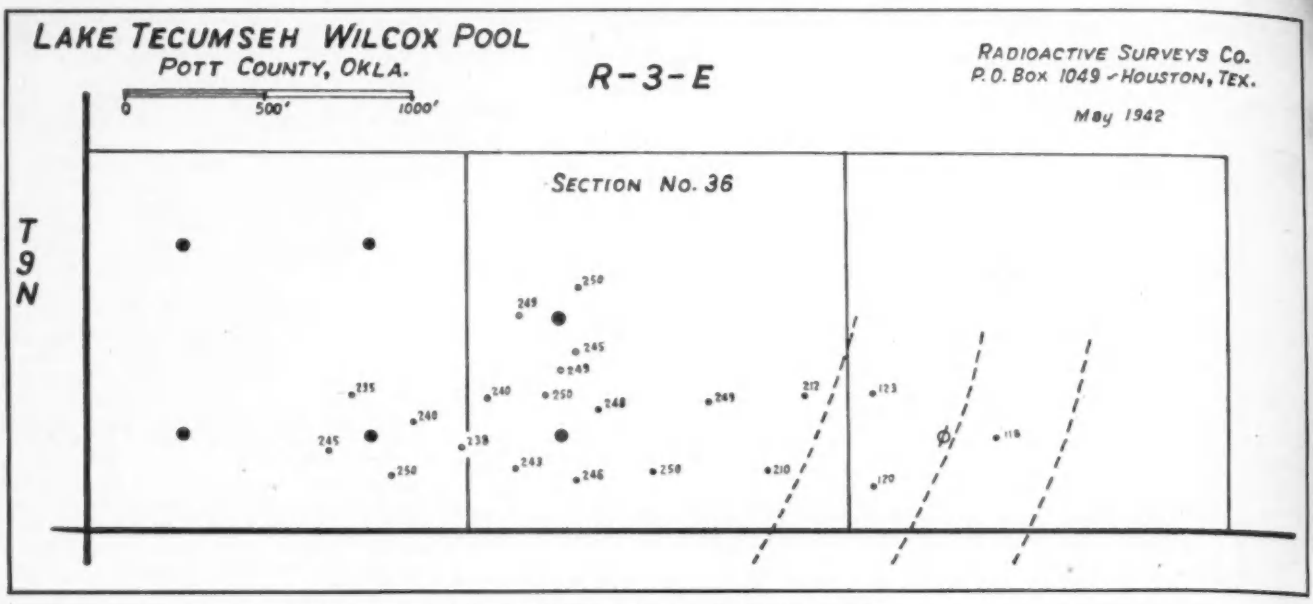


FIGURE 2

Determination of the oil-water contact in the Simpson sand, in which the uniformity of readings over production is readily apparent, permits limiting of drilling to areas shown to be potentially productive, the contour lines shown in Sections 8 and 9 being drawn to average increases in readings. Accuracy of such determinations is proven by dry hole in Section 9.



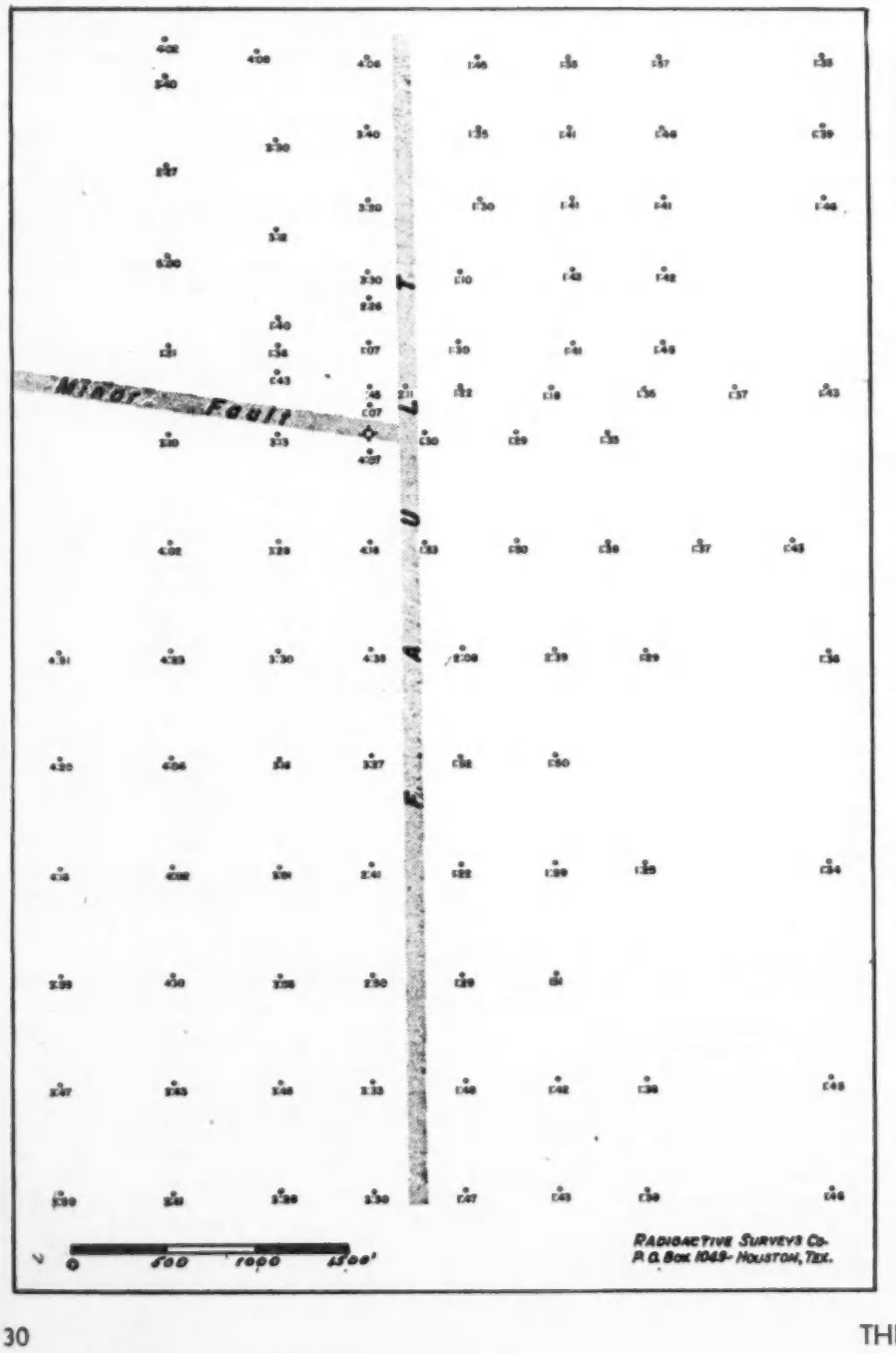


FIGURE 3

Above—Checking "pimple" pools by means of radioactivity determinations shows how in the Wilcox relatively high values are found at the oil-water contact, enabling accurate delimiting of productive area. Where known "pimples" in this formation do not show the characteristic oil-water contact change, oil is apparently missing, and no drilling is indicated, whenever the characteristic "halo" effect is not recorded.

the probable area within which drilling would be successful. In case of a right-angled turn in the productive sand, it might be that one line of stations would lie exactly over the center of the sand, while stations on either side would show progressively higher values. This variation in readings, when plotted on a map of the area, would indicate the trend of the shoestring even more accurately than could be outlined by drilling logs obtained from wells drilled at normal spacing and all penetrating the sand. While readings showing the radioactivity would afford data from which the shoestring could be plotted, and therefore subsequent drilling be directed, there is nothing in the continuity of values to guarantee continued productivity, the value of the readings being in the regular variation from a low and in the demonstrated fact that such a variation, when plotted, gives the trend of the productive sand.

Determining Oil-Water Contact

Where sand is productive, and basic data may be obtained from wells already drilled to pay, radon determinations give a close check on the contour of the oil-water contact. Since oil absorbs from 40 to 50 times as much radon as does water—except in the case of a few highly charged mineral waters such as Texas' hot sulphur flows—it is not necessary that a very great change

FIGURE 4

At left—Much unprofitable drilling may be eliminated by determining trend of faults before moving in the rig. Where a test cuts a fault, surveys based on this well enable the trend of the fault to be traced through the break in values corresponding to that at the well, and permit seismographic checking of whether fault is slip or regular.

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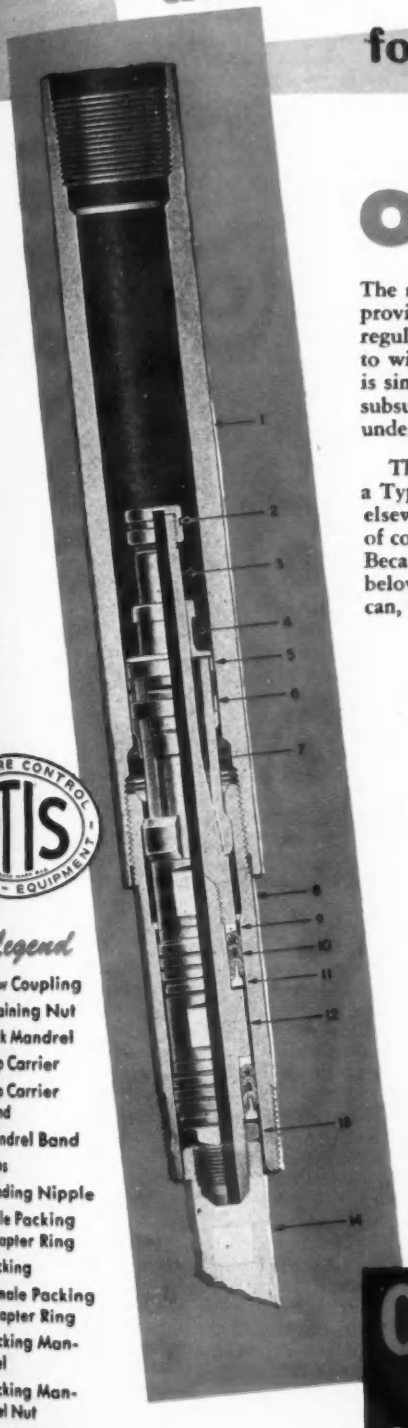

Legend

1. Flow Coupling
2. Retaining Nut
3. Lock Mandrel
4. Slip Carrier
5. Slip Carrier Band
6. Mandrel Band
7. Slips
8. Landing Nipple
9. Male Packing Adapter Ring
10. Packing
11. Female Packing Adapter Ring
12. Packing Mandrel
13. Packing Mandrel Nut
14. Sub-Surface Control

The New OTIS TYPE *E B* CHOKE

The new Otis Type EB Choke represents the latest design in subsurface pressure control and provides an easily removable, yet a most positive, lock and packoff assembly for subsurface regulators, chokes, plugs, safety valves, etc. The original purpose of the tool was primarily to withstand extremely high subsurface temperatures and pressures; however, the fact that it is simple to run and pull, plus additional features, makes it most desirable for any removable subsurface control installation. This tool, like all other Otis subsurface tools, is run and pulled under pressure on an ordinary steel measuring line.

The Type EB Choke differs from the regular Type B Choke in that it is necessary to have a Type EB Landing Nipple in the tubing string for the EB Choke to seat in. It will not seat elsewhere; consequently, the choke has only one fixed depth at which it will set. It is necessary, of course, that the Landing Nipple be installed in the tubing string at the time the well is tubed. Because the bore of the Landing Nipple is slightly restricted, it is important that it be placed below the maximum anticipated swabbing depth. Bottom hole pressure bombs, samplers, etc., can, however, be run through the Landing Nipple without trouble.

THE PRINCIPAL ADVANTAGES OF THE EB CHOKE ARE AS FOLLOWS:

1. ***Heat Resistant Packing Element***—The slightly restricted Landing Nipple makes possible the use of the new asbestos-base heat-resistant packing now used so successfully on the Otis Side Door Choke. This packing easily withstands the highest subsurface temperatures and pressures and is inert to acids, alkalis and sour crudes.

2. ***Unnecessary to Flow Well to Set Packing***—The packing fits snugly in the restricted nipple; therefore, it is not necessary to flow the well hard to cause the initial shutoff. This is particularly important where there is danger of pulling sand into the tubing string by flowing the well at an excessive rate.

3. ***Simple to Run and Pull***—Because the O. D. of the Type EB Choke is smaller than the regular Type B, the new tool is easier to run and pull through crooked tubing, paraffin deposition, etc. The setting and pulling operation is simpler and the preset packing always assures a positive shutoff regardless of the pressures encountered.

4. ***Flow Coupling***—A special flow coupling, much heavier and longer than standard couplings, is used immediately above the Landing Nipple to reduce the possibility of abrasive flow cutting through the tubing.

5. ***Positive Lock***—The lock employed on this tool is the same as that used so successfully on over 1200 Otis Side Door Choke installations.

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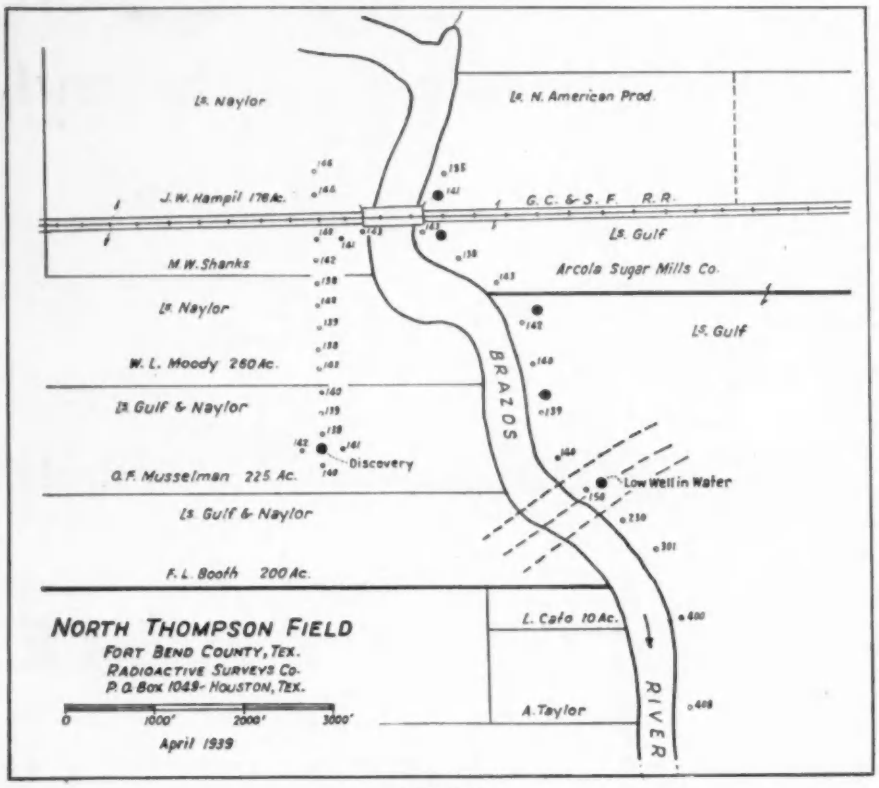

FIGURE 5

Surveys run at North Thompson field, Fort Bend County, Texas, in 1939, when the discovery well had been finalled but before other drilling, show the trend of production northward—as afterward developed—but also indicate productivity across the river to the east, despite general belief at the time that that latter area was beyond a fault and would show dry. The oil-water contact is indicated by survey and proven by well between dotted contour lines at right center of the map.

in radon determination from those readings taken directly over known producing areas be obtained to permit the proper plotting of an oil-water contact which will be accurate to within the limits imposed by present spacing rules. In the Lindsborg Pool of McPherson County, Kansas, this method was used for the determination of the oil-water contact in the Simpson sand.

Surveys were made with the stations on 500 to 660-foot intervals, extending generally perpendicular to the line of as presently defined limiting wells. These stations, checking closely as to values when over production, indicate a rapid increase in values once the oil-water contact is crossed. Subsequent linking of stations of equal values of readings, or the drawing of smooth curves linking like values averaging adjacent stations, permits the contouring of the sand and the delimitation of production.

Checking "Pimple" Pools

The Wilcox in Oklahoma is a formation which might be represented by a body of water, frozen to form numberless crests or waves, each separate from the others, but many of them being of approximately the same height and thus susceptible of trapping oil in greater or less quantity. Since water is present in nearly all these "pimple" formations, the use of radon determinations has proven satisfactory in segregating the more favorable of these from the others for potential drill stem tests. If, as in the instance cited of the Lake Tecumseh pool, high radioactive values are found at the oil-water contact, it may be assumed that such is the case in other similar situations. Then, if there is no oil present in the structure of a given Wilcox "pimple," there is no oil-water contact and consequently no high values show in any of the station readings of a set of surveys traversing the formation. Continuity of reading values, even though a "pimple" may exist, is evidence against drilling of a well at the indicated high.

Since many of these "pimple" structures have been shot out and located, many of them shown to cover areas of 40 acres or less, the odds against finding oil are so great that it is too expensive to drill without corroborative data. The radioactivity survey, while it may indicate change in values at the site of the "pimple," so far has not been found to give the characteristic "halo" effect when there is no oil on the "pimple."

In reconnaissance work, prior to core drilling or other subsurface exploration, it is necessary only to run the regular radioactivity surveys and map the changes, then move in with a core drill and drill pairs of holes on each change. Only that amount of drilling would be required to determine whether the change in values was caused by a change in structure or in the radioactivity of the soil. On a survey in which the values remain uniform over considerable distances, no drilling would be indicated, although the uniformity might conform to an anticline trending with the survey.

One of the developments of radioactivity surveys which promises to prove of great value in reducing unprofitable drilling, and even in the continued leasing of much land, is the determination of the trend of a fault after it has been cut by one well.

By selecting a baseline at some convenient distance from the well, a series of surveys are run, in the instance cited working from a dry hole which cut the fault at the location indicated in the sketch map. These surveys were run in an east-west direction at 550-foot intervals for some half mile with each side of the dry hole used as a base point. Readings reproduced from this set of surveys show a sudden definite increase in values, ranging from about double to more than three times those to the east of the break or change. In the case of this survey the line of change, when plotted, runs in a straight line over the area surveyed and indicates the presence of a definite slip fault, running north-south, and as clearly marked by the survey values as though outcropping in a definite break on the surface.

Use of the method for determining the trend of a fault, when this feature has been cut by a previously drilled well, enables the direction of a slip fault to be determined without further drilling, or, in the case of a regular fault, permits the contouring of the level at which the fault is cut by the well for any desired distance to either side of the base point.

Closure Against Fault

By shooting a line with the seismograph paralleling the fault as delimited by the radioactivity survey, it is possible to show closure against the fault with a minimum of work and time for the seismograph crew. Two such surveys, one on either side of the fault, would give complete control of details on both high and low sides of the fault.

An example of fault determination by means of the radon emanations is illustrated by surveys run at the North Thompson field, Fort Bend County, Texas, in April, 1939. At this time the discovery well had been finalled, and the field was generally believed to be limited eastward by a fault closely underlying the bed of the nearby Brazos river. So prevalent was this belief that the area eastward of the river was not even under lease, though much ground had been taken up north and south of the discovery well. The readings obtained at the various stations east of the Brazos show values closely checking with those of the north-south survey run through the discovery well, and indicate that production should extend eastward beyond the rvier. That is, the supposed "fault" was non-existent at the point suspected. Subsequent drilling and development of the pool proved the accuracy of these deductions, and some of the best producers of the pool were drilled in the line of wells flanking the river to the east.

This name survey also indicated, through the sudden increase in values, the presence of the oil-water contact at a point closely approximating the location of the well between the three contour lines dotted in and marked "low well in water."

Though still not demonstrably an oil-finding method, radon determination should become even more increasingly useful in delimiting work, and in the elimination of random drilling or the equally expensive "four-square" method of drilling four offsets to a test to determine trends, faults and other subsurface data necessary to the search for more production.

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Prospects Favorable For Deeper California Production

PAW survey designed to help meet demand for more oil to wage war in Pacifc area. Deeper-zone drilling has resulted favorably in the past and continued such development now challenges the industry. Penetration of full stratigraphic section said needed

By ALBERT GREGERSEN, District Geologist, and FRANK S. PARKER, Petroleum Geologist, Petroleum Administration for War, District Five

THE demand for California oil to wage the Pacific war is so enormous that means must be found, if possible, to accelerate the state's rising rate of production.

Even at its present production rate, which has been abetted by an aggressive wildcat campaign, the California oil industry is required to draw heavily on inventories to meet combined military and essential civilian demand on the Pacific Coast. These inventories have now declined to the point where they can no longer be counted on to supplement production in any appreciable quantity. It appears highly important, therefore, that the industry in California test thoroughly and promptly the possibility of deeper zone production in existing fields.

In order to assist and encourage operators to prosecute an intensive deeper zone exploratory program, the Petroleum Administration for War, District 5, production division, has sponsored an investigation of deeper zone possibilities and the data developed are presented herewith.

Deep Tests Successful

In exploration for deeper zones, one of the principal factors necessary for accumulation of petroleum, namely, favorable structural conditions, has already been proved by the original discovery of the field in which the deeper zone test is to be made. That the risks involved in this type of exploration are smaller than in wildcatting for a new field is shown by the relatively high percentage of success of deeper zone tests.

Granting that the structural hazard has been materially reduced in deeper zone tests, the most important problem is whether or not sediments with favorable reservoir characteristics and suitable source beds are present under the field where the deep test is to be drilled.

If the objective deeper strata have produced petroleum in other fields located in the same sedimentary basin, the hazard is still further reduced. Then the principal problem becomes one of local distribution, character, and extent of the prospective strata within the basin itself.

For the purpose of this study the accompanying charts were prepared showing the oil fields of the state. On these are indicated the age of the oldest formation outcropping in the field, the position in the geologic section of the producing zones, the deepest stratigraphic penetration within the field and the depth of the deepest well drilled.

The charts have been divided to cover fields grouped in geographical or geological relationships. In the case of the San Joaquin Valley, the fields are divided into three groups for convenience. Index maps show the location of the fields by a serial number referring to a number on the chart. In some cases a group of several small fields have been included under one number where stratigraphic conditions within those fields are similar and they are located relatively close together.

Eocene Promising

The depth of the deepest well drilled in each field is included on the chart to indicate among other things whether drilling depths for deeper prospective zones would be mechanically feasible. It should be pointed out, however, that the greatest depth reached in a field is not always at the best structural position. For this reason depth is not always significant. Likewise it should be pointed out that the deeper prospects of a field have not necessarily been condemned by unsuccessful stratigraphic penetration below the lowest producing zone. As symmetry, rapid stratigraphic changes, unconformities, and other geologic anomalies may be responsible for the failure of deep tests drilled to date in the field.

A number of points with reference to deeper zone prospects stand out:

1. Eocene formations appear to offer most of the untested prospects for deeper zone production in California. That the Eocene is productive of oil and gas has been proved in several fields in the San Joaquin and Sacramento Valley basins as well as in the Ventura Basin. Showings of oil in formations of Eocene age have been encountered in wildcat wells in the Santa Maria and Los Angeles basins, although no commercial production has yet been obtained in these areas. A study of the charts will show that there are many fields in which the Eocene has not yet been reached.

2. Commercial production of gas has been obtained from beds of Cretaceous age in fields in the upper San Joaquin Valley and Sacramento Valley. Oil has been produced commercially from the Cretaceous at Coalinga (Oil City). Showings of oil have been encountered in a number of wildcat wells on the west side of the San Joaquin Valley north of Coalinga. While the showings and production from Cretaceous are not as extensive and important as from the Eocene there still remain possibilities of deeper zone production wherever a sedimentary section of Cretaceous age, similar to the Oil City section, underlies a known productive structure. This would apply particularly to the San Joaquin Valley.

3. Production from fractured or weathered "basement" rocks may be a deeper zone possibility which may be of considerable importance. There are already some fields in which this type of production is or has been of some consequence, notably El Segundo, Del Ray, and more recently Santa Maria Valley. It is not unlikely that where favorable conditions exist as to porosity of "basement" rocks and source character of overlying sedimentary beds, production may well be obtained from "basement" rocks underlying a number of fields in California.

Deeper zone prospects of interest in particular fields are discussed below. The number shown with each field's name is the reference number assigned to that field on the charts. The data presented on these charts are believed up-to-date as of July 15, 1944. Comments have been supplemented to September 1, 1944.

Los Angeles Basin

A number of fields in the Los Angeles Basin have not completely penetrated the Miocene Section. Although most of the Miocene production has been obtained from the uppermost Miocene, as the chart shows, it is not unlikely that if the entire Miocene Section had been explored in all the fields the picture might have been different. In two instances production has been obtained from the Middle Miocene. These are Puente (10)* and Inglewood (18).

A wildcat immediately outside the producing area of Buena Park (8) penetrated several hundred feet of Eocene sands with very low permeabilities. Although the sands had good showings they failed to produce on formation tests, probably because of low permeabilities. The presence of petroleum does indicate deeper possibilities in Los Angeles Basin fields located in areas that may be underlain by Eocene sediments. From present knowledge of the geology of the Los Angeles Basin, those in the northeastern part would be most likely to have Eocene prospects. As indicated on the chart, a number of the fields in the southwestern part of the Basin have already reached the basement (Jurassic ? Franciscan) without encountering any Eocene (18, 20, 21, 24, 25, 26). In Inglewood (18) a deep test below the Sentous is believed

* Throughout this article figures in parenthesis indicate field's number on map of area.

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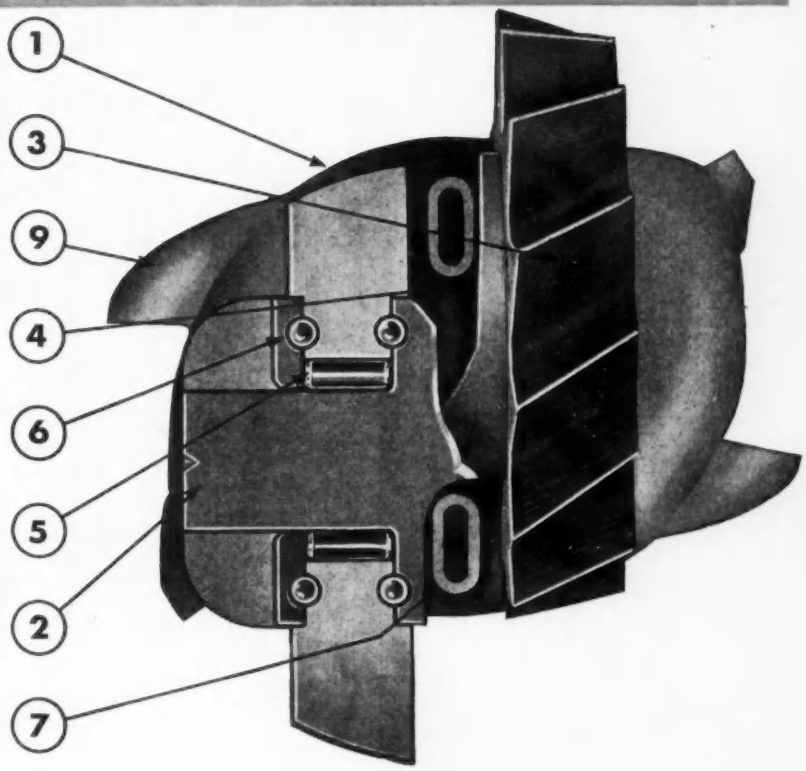

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to have been unsuccessful in discovering a new deep zone and in Wilmington (26) a number of wells have been drilled, and others planned, to test the basement weathered zone below the Ford zone.

The following brief comments relate specifically to deeper prospects of fields in the Los Angeles Basin:

Kraemer (2) and *Richfield* (3) may both have Eocene possibilities.

Brea Olinda (5) appears to have untested possibilities in Middle and Lower Miocene and Eocene.

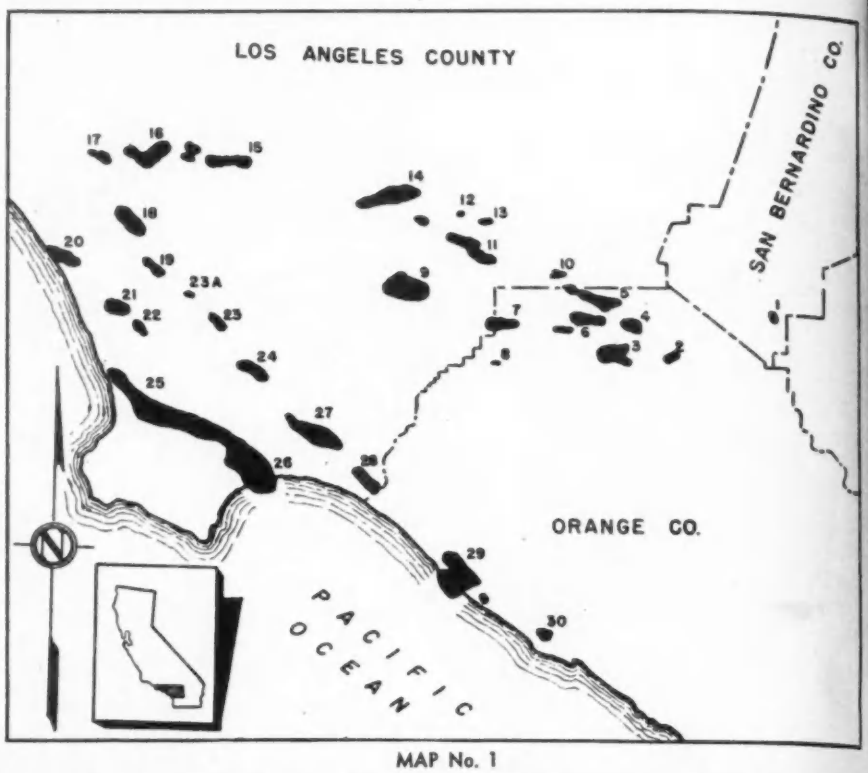
East Coyote (6) appears to have been tested through the Lower Miocene, although some doubt exists as to the conclusiveness of the test. Due to faulting, the structural conditions in this field are very complicated and the deep test may not have been located at the best structural position. Eocene may be present under this structure.

West Coyote (7)—The entire Miocene Section has not been penetrated as far as available information indicates. Possibilities may be present in both Lower Miocene and Eocene under this field.

Buena Park (8)—Deeper prospects would lie outside the present area of production due to overlap conditions. The outpost of this field was drilled to 11,422 feet and plugged back to 11,200 feet to test reported oil sands.

Santa Fe Springs (9)—One deep test, Union's Bell 100, penetrated a thick section of uppermost Miocene strata. The part of this section lying below present production was low in permeability. Structural location of the test was good. A thick section of Miocene and possibly Eocene should be present below strata penetrated by Bell 100.

Puente (10)—If Eocene sediments are



MAP No. 1

GEOLOGIC SECTION (SEE MAP No. 1)			1 CHINO	2 KRAEMER	3 RICHFIELD	4 YORBA LINDA	5 BREA-OLINDA	6 EAST COYOTE	7 WEST COYOTE	8 BUENA PARK	9 SANTA FE SPRINGS	10 PUENTE	11 WHITTIER	12 NO WHITTIER HEIGHTS	13 TURNBULL	14 MONTEBELLO	15 LOS ANGELES	16 SALT LAKE	17 BEVERLY HILLS	18 INGLEWOOD	19 POTRERO	20 VENICE-DEL REY	21 EL SEGUNDO	22 LAWNDALE	23 ROSECRANS-ATHENS	23A WESTERN AVE.	24 DOMINGUEZ	25 TORRANCE	26 WILMINGTON	27 LONG BEACH	28 SEAL BEACH	29 HUNTINGTON BEACH	30 NEWPORT
RECENT PLEISTOCENE			⊤		⊤	⊤		⊤	⊤	⊤	⊤				⊤			⊤	⊤	⊤	⊤	⊤	⊤	⊤	⊤	⊤	⊤	⊤	⊤	⊤	⊤	⊤	
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MIOCENE		DELMONTIAN	⊤		●	⊥	●	●			⊤●	⊤	⊤●			⊤●	⊤	●	⊥		⊤●			●		⊤●	⊤●	●	●	●	●	●	●	●
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		LUISIAN AND RELIZIAN STAGES										⊤●						⊥		●												⊥		
		SAUCESIAN AND ZEMORRIAN STAGES	⊥	⊥	⊥			⊥																										
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— LEGEND —
⊤ Surface Formation.
☼ Gas ● Oil ⊘ Abandoned Oil Field. ⊘☼ " Gas "
⊥ Deepest Formation Penetrated.

P.A.W. District 5. July 15, 1944.

Chart for MAP No. 1

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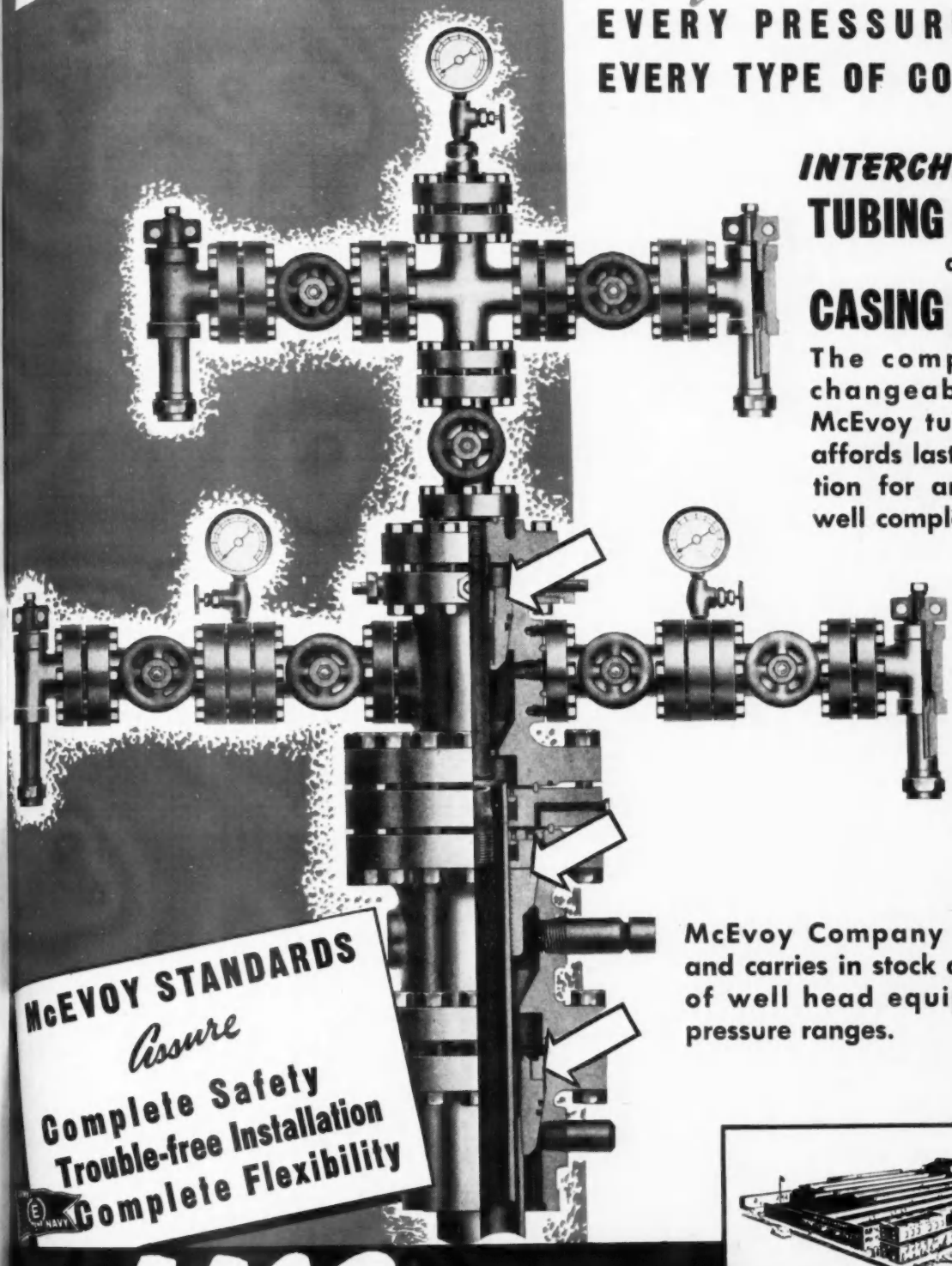

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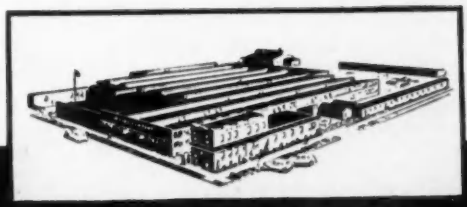
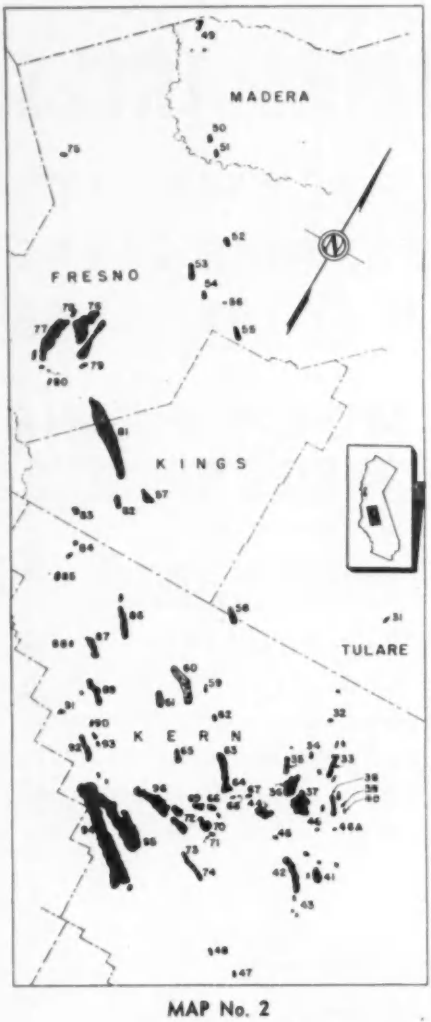


McEvoy COMPANY

HOUSTON, 1, TEXAS



MAP No. 2

present under this field there may be some possibility of deeper production. Structural conditions and production to date detract from the desirability of deeper prospects.

Whittier (11) and *West Whittier* (12) have been tested in the uppermost Miocene only. A recent test in the Whittier field penetrated a considerable section of Upper Miocene below present production with unfavorable results. Permeabilities were low, as is often the case in the Upper Miocene in the Los Angeles Basin. A second well drilled to 1900 and plugged back to 1600 feet in North Whittier Heights found oil in a sand 400 feet below the previous producing zone.

Turnbull (13)—One well in this small field was drilled considerably below present production with unfavorable results. Because of the small extent of the field it cannot be considered as having important deeper possibilities, although considerable Miocene section and possibly Eocene may be present below the field.

Montebello (14)—A test of deeper prospective zones, Union Oil Company's Howard and Smith 3, is being drilled. Low permeabilities have so far been reported in new sands uncovered. A thick section of Miocene and possibly Eocene may be expected underlying this field. Structural conditions are favorable for a deep test. A second deep test is drilling. However, it is within the old area of Pliocene shallow production.

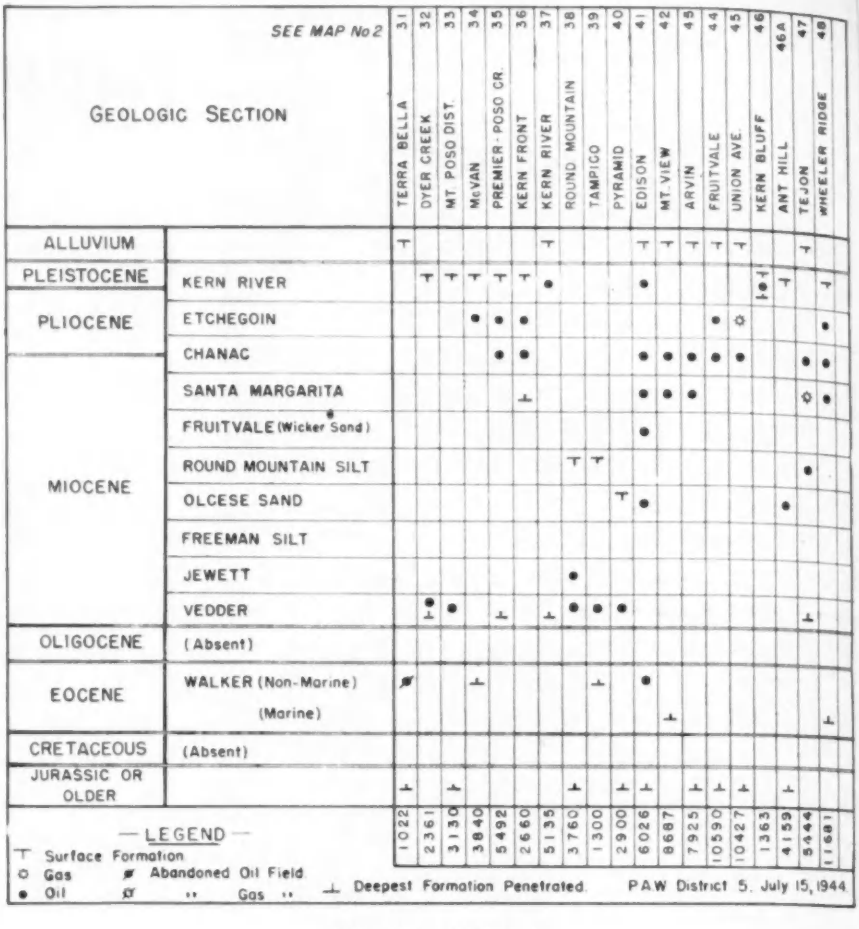


Chart A for MAP No. 2

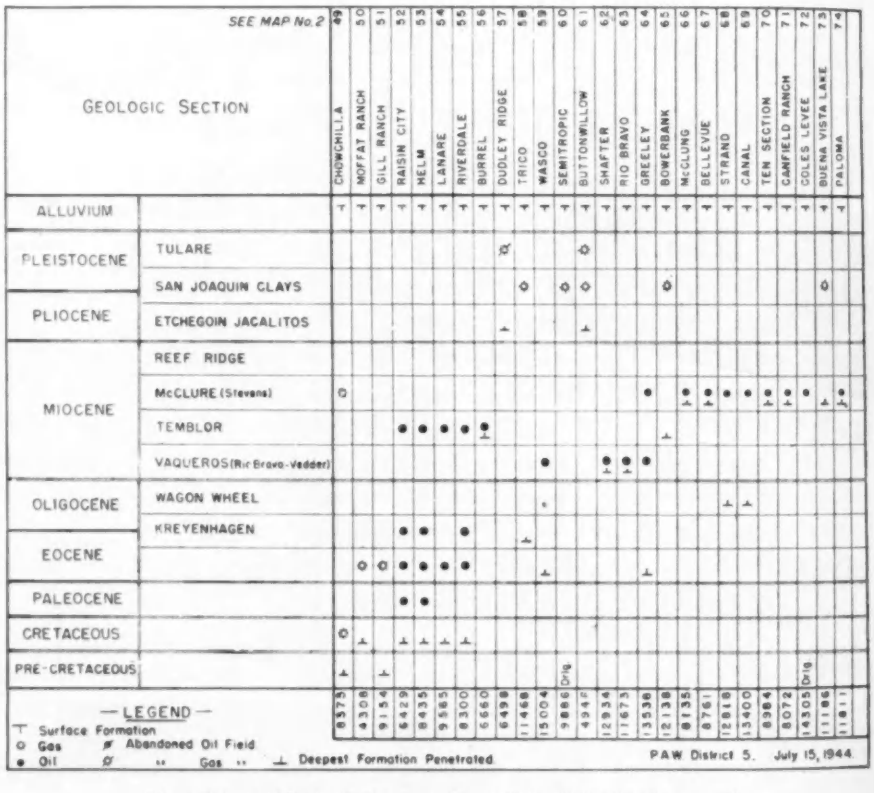


Chart B for MAP No. 2 (Also see Chart C for MAP No. 3, page 40)

Los Angeles (15)—Production has been at shallow depths. A proposed joint test of deeper possibilities may soon be drilled if permits can be obtained from the city of Los Angeles.

Salt Lake (16)—A deep test was drilled

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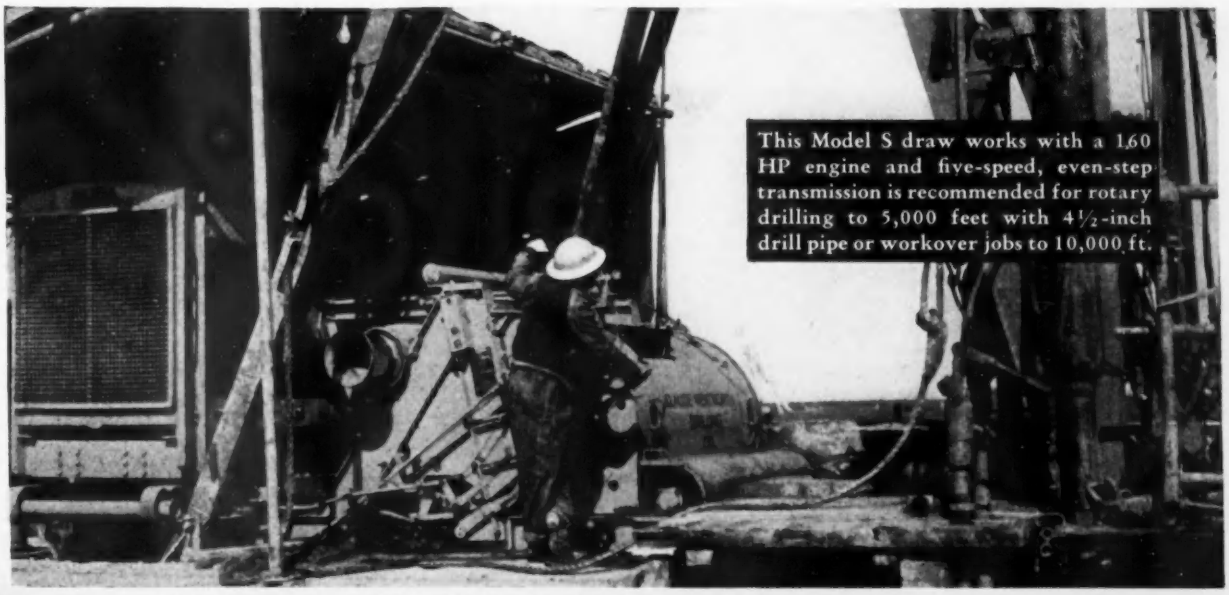

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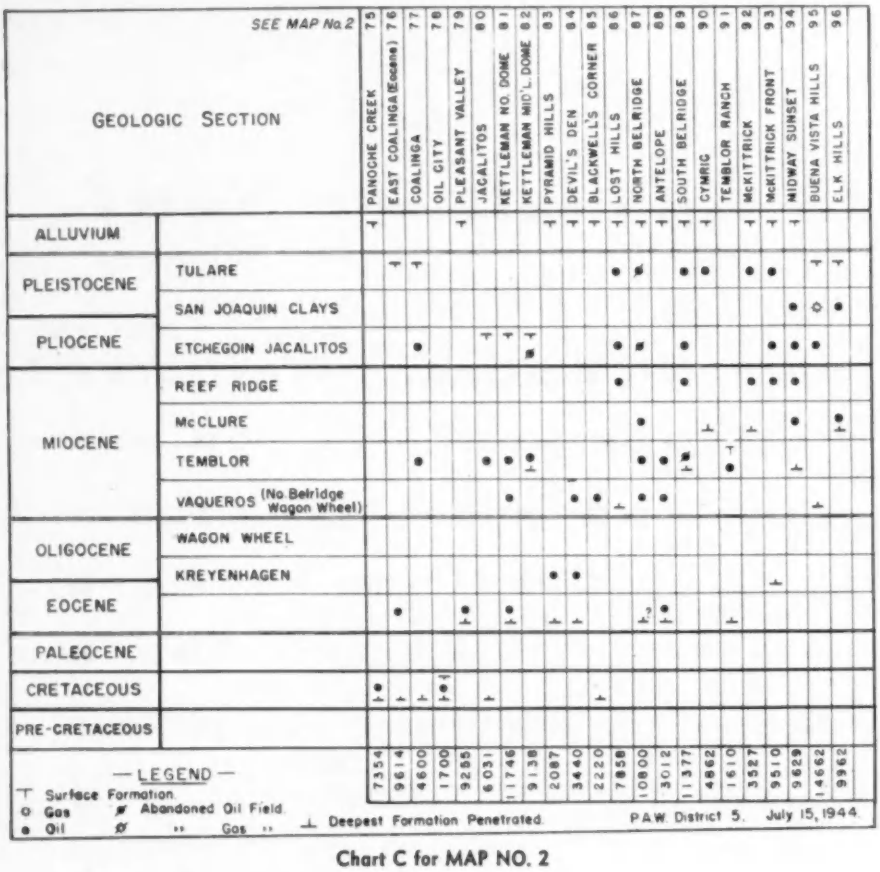


Chart C for MAP NO. 2

last year by Shell Oil Company. The Upper and Middle Miocene section may have been completely penetrated. Structural conditions are complicated and obscure and there may be some question whether the test was drilled in the best structural location. Surface improvements are such that it is unlikely that a suitable deep test will be drilled again in this field.

Beverly Hills (17)—Deeper untested possibilities exist. Several attempts have been made to obtain zoning variance from the city of Los Angeles to drill a deep test, but without success.

Potrero (19)—Structural conditions are obscure, which complicates prospecting for deeper zones.

Rosecrans-Athens (23)—Deeper prospects are less promising in view of the negative results in the deep test of the adjoining Dominguez (24) field. However, rapid lateral changes of permeabilities are common in the Miocene, so the failure of the Dominguez test does not condemn deeper prospects here.

Long Beach (27)—Until the entire sedimentary section has been penetrated, prospects for deeper possibilities are present. A recent deep test north of the main longitudinal Cherry Hill fault proved disappointing because of low permeabilities. Higher permeabilities of Miocene sands in the Seal Beach field (28) to the southeast suggest that in the southeasterly end of the Long Beach field production may be obtained from the deeper sands, which were found to be too low in permeability to produce commercially in the northwestern part of the field. This idea will be tested by a well now drilling. Whether Eocecene sediments may be found is unknown.

Seal Beach (28)—Basement has not been reached and consequently it must be considered to have possibilities for deeper Miocene and possibly Eocene production. One or more deep tests are now under way.

Huntington Beach (29)—A deep test is under consideration. Due to a variety of structural features within the field, several deep tests at different locations will be required to fully evaluate deeper possibilities. A recent deep test of the Surf area, shown on the index map to the southeast of the main field, proved unsuccessful. Structural conditions at depth may not have been favorable for accumulation or low permeabilities may have been the reason for the failure of this test, which was not carried to basement, as far as is known.

San Joaquin Valley (East Side)

In most of the fields in this group wells have penetrated the principal objective sand (Vedder-Miocene), and with few exceptions the basement has been reached.

Premier (35), *Kern Front* (36) and *Kern River* (37)—In these fields there is a possibility that Eocene sands may be present, and if so they may well be productive.

Kern Bluff (46)—This recently discovered field is producing from the Kern River series. Little is known about structural conditions in the field and deeper possibilities are therefore unknown.

San Joaquin Valley (Valley Floor)

Raisin City (52) and *Riverdale* (55)—In view of the absence of oil or gas in the top of the Cretaceous in the wells which reached it, the deeper Cretaceous prospects do not look very promising.

Helm (53) and *Lanare* (54) may have deeper possibilities in the Cretaceous. No test has been carried much below the top of the Cretaceous at the most favorable location.

Trico (58—One deep test was drilled to a depth of 11,466 feet just outside the northeast limits of the productive area. The well bottomed in Upper Eocene (Markley). Location was chosen east of the apex of the shallow structure because seismograph work indicated a shift of the axis in that direction at depth. For this reason it does not seem likely that a deep test within the limits of the field would be justified.

Wasco (59)—The discovery well was carried into the Eocene, but was plugged back to the present production of Lower Miocene age. Showings of oil were reported from the underlying Oligocene and Eocene to bottom of the hole.

Semitropic (60)—Geophysical work has indicated a shift to the east of the apex of this structure at depth. A well being drilled to test the deeper possibilities outside the present producing area on this theory had reached 11,987 feet by September.

Buttonwillow (61)—No deep test has been drilled within the limits of this field below the San Joaquin Clays (Pleistocene-Pliocene). Deep tests on the Bowerbank structure to the southeast were not encouraging so far as the Buttonwillow deep prospects are concerned. However, the structure may warrant a deep test. Prospective zones would be very deep with the Vedder-Rio Bravo sand probably at 15,000 feet.

Shafter (62) — The possibility that Eocene sands may be productive will eventually justify a deeper test. The structure is small, and untested zones would be below 13,000 feet.

Rio Bravo (63)—No test has been carried to the Eocene within the field, and prospects appear fair enough to warrant deeper drilling. Untested zones lie below depths of 11,500 feet.

Greeley (64)—One well on the edge of the field, Elrich Community 1, was drilled to basement at 13,538 feet. This well encountered about 40 feet of gray Eocene sand. The possibility that this sand may prove productive at a better structural position is being tested near the top of the structure. This test reached basement at 13,465 feet but testing of the Eocene had not been completed.

Bowerbank (65)—A deep test has been drilled to the Temblor within the area of shallow gas production. Closure at depth is reported questionable on the basis of geophysical data, and a deep test for Vedder sands does not appear very attractive.

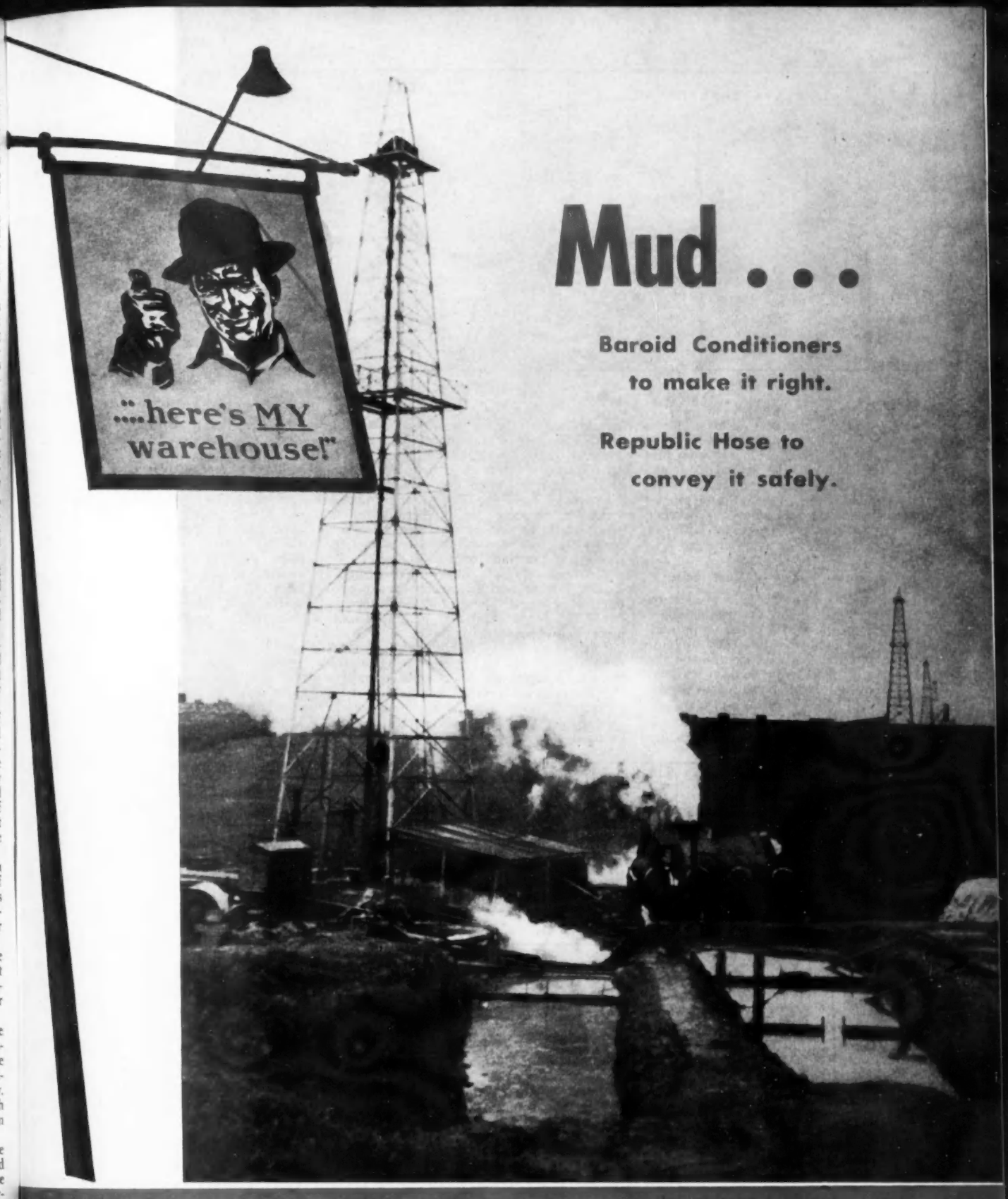
McClung (66) and *Bellevue* (67) have not been tested much below present Stevens sand production. Structural conditions may not be favorable for a deeper test in either.

Strand (68) and *Canal* (69) fields have been tester to the Wagon Wheel (Oligocene) with no production below the Stevens zone. The Vedder sand was reported to be very low in permeability. Eocene possibilities may exist under both of these fields at depths of more than 13,500 feet.

Ten Section (70)—Because of the size of this structure, the untested Vedder and Eocene sands present very attractive deeper zone prospects and lie within currently feasible drilling depths.

Coles Levee (72)—A deep test down 14,845 feet, was approaching the California record of 15,004 feet with results not reported. The well probably will be carried to the Vedder. Eocene prospects should also be present under this field.

Buena Vista Lake (73) and *Palmo* (74)—Deeper drilling should be of interest since only the equivalent of the Stevens zone has been tested. Because of faulting, thinning, and lateral changes in facies in



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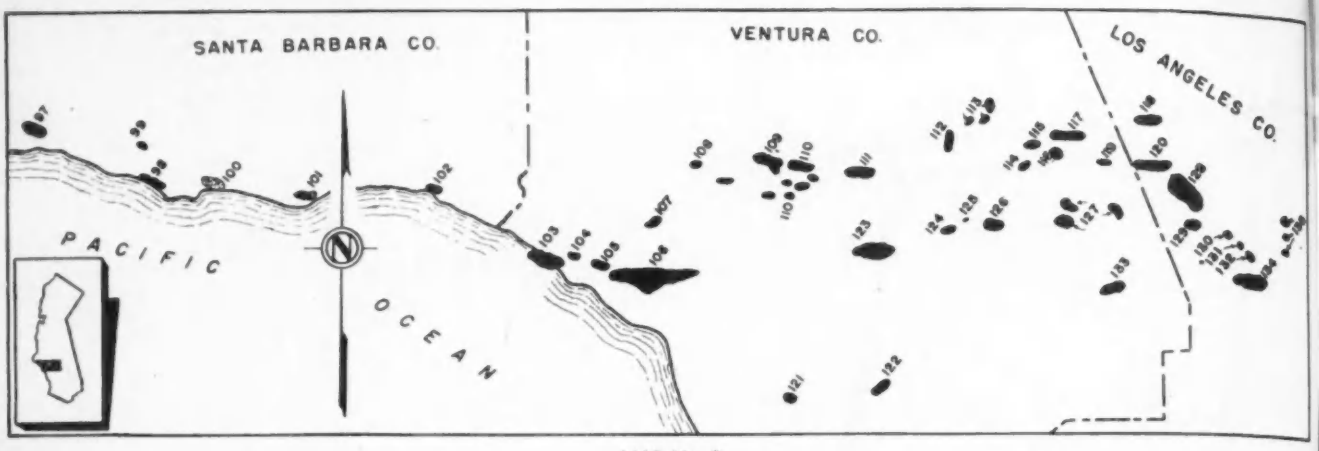

MAP No. 3

the Paloma field, the best location for a deep test may not be at the apex of the structure. A deep test to explore new formation would have to be drilled to depths in excess of 10,500 feet. The Vedder sand, or its equivalent, may lie at a depth of more than 13,500 feet, and the Eocene may not be reached above a depth of 15,000 feet.

San Joaquin Valley (West Side)

Recent discovery of Eocene production in the Antelope field (88) has enhanced the deeper prospects for Eocene production in other fields on the west side of the San Joaquin Valley. Previously the most southerly Eocene production was obtained from the Kettleman North Dome field (81), 40 miles north.

Kettleman North Dome (81)—Possibility for deeper production exists pending penetration of the entire sedimentary section. The deepest production now comes from Avenal sand of Eocene age. The entire Eocene section has not been penetrated, and its thickness is not known. Cretaceous beds should be found underlying the structure which, because of its size, should be one of the most attractive places to test possibilities of the Cretaceous in the San Joaquin Valley.

Kettleman Middle Dome (82)—Should Lower Eocene and Cretaceous prove productive at North Dome, this field appears favorable for a deep test of the Eocene and Cretaceous possibilities.

Lost Hills (86)—Deep possibilities of this large structure are promising in the Eocene. A deep test is now under way in the southeastern end of the field, located to test the possibility of accumulation in sands older than any yet penetrated. The location is made on the southeast plunge of the structure with the idea that overlapping Eocene sands may be present.

North Belridge (87)—Deeper prospects still exist in this field in the Eocene and possibly in the Cretaceous.

Antelope (88)—Structural conditions do not favor deeper accumulation within the productive limits. Rapid lateral changes in facies, overlap conditions, and faulting offer possibilities for production in the vicinity of the present productive area in beds older than those presently producing in the field. Discovery of Eocene production from a wildcat to the north of the field improves the prospects for Eocene production on the west side of the San Joaquin Valley south of Kettleman Hills.

South Belridge (89)—Structural conditions at depth are not well-known. Deeper possibilities below the McLure (Upper Miocene) probably are present. One deep test found good showings in the Temblor

GEOLOGIC SECTION		SEE MAP No. 3	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135
			CAPITAN	ELWOOD	GOLETA (Oil)	GOLETA (Gas)	MESA	SUMMERLAND	RINCON	PADRE	SAN MIGUELITO	VENTURA AVE.	TIP TOP	PIRIE	31SAR	SANTA PAULA (Oil)	TIMBER CANYON	SESPE CREEK	TAR CREEK	HOPPER CANYON	SUNSET	MODELO	TEMESCAL	OAK CANYON	HOLSER CANYON	DEL VALLE	OXNARD	CONEJO	SOUTH MOUNTAIN	BARDSDALE	ELKINS	SHIELLS CANYON	TORREY-TAPO-EUREKA	NEWHALL POTRERO	PICO CANYON	TOWSLEY CANYON	WILEY CANYON	RICE CANYON	SIMI	ALISO CANYON	NEWHALL FIELDS
ALLUVIUM																																									
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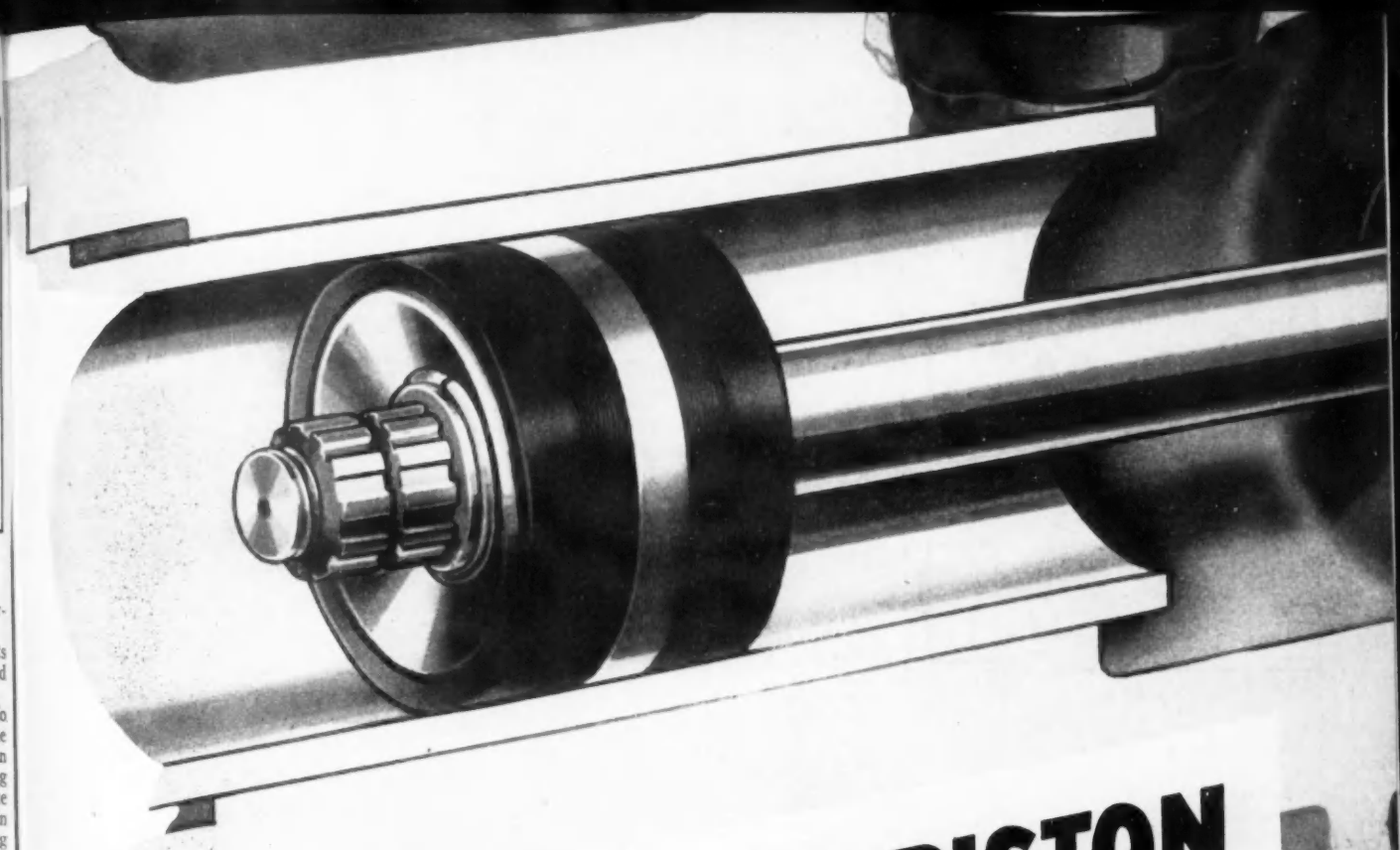
— LEGEND —
⊤ Surface Formation.
☼ Gas ⊀ Abandoned Oil Field.
● Oil ☼ " Gas " ⊥ Deepest Formation Penetrated.

P.A.W. District 5. July 15, 1944.

Chart for MAP No. 3



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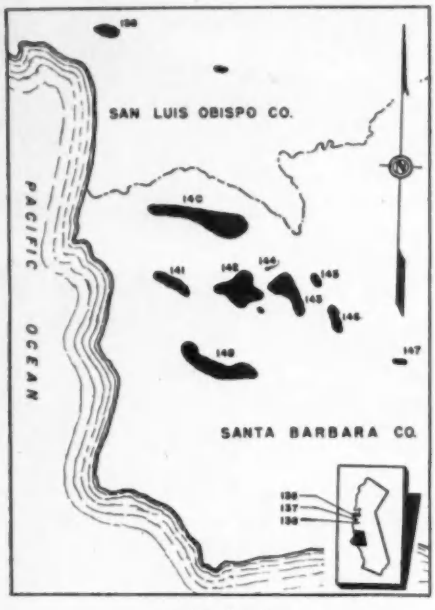

MAP No. 4

below 11,000 feet, but was abandoned for mechanical reasons.

McKittrick Front (93)—A deep test was drilled recently into the Oligocene in this field. Present production comes from sands of Pliocene age. Deeper prospects above the Eocene appear to have been condemned.

Midway-Sunset (94)—Due to structural and stratigraphic complexity and large areal extent of this field, it is likely that deeper possibilities exist. Many local areas remain untested in deeper zones known to be productive in other parts. United States Geological Survey is making a study of such possibilities, the results of which should reveal favorable areas for deeper zone tests. One deep test in 36-12n-24w was abandoned recently at 8647 feet, probably still in Middle Miocene beds.

Buena Vista Hills (95)—Recent discovery by Standard Oil Company of the 27-B sand indicates possibility for deeper production in local areas. A deep well drilled by Honolulu Oil Company in the southeastern part of the field was discouraging with respect to Miocene possibilities. Stratigraphic variations may complicate the picture. A recent test outside the field on the northeast flank of the structure by the Union Oil Company (Well U. S. 1-B, 20-31-24) encountered no permeable sand in the Miocene to a total depth of 9542, at which point the well was approximately 1000 feet below the top of the Miocene. Eocene prospects under this large structure should be given some consideration.

Elk Hills (96)—Lower and Middle Miocene and Eocene possibilities may exist. Because of the size of the structure these may be very important.

Ventura Basin

In the Ventura Basin one of the most promising untested possibilities is that of accumulation below the major thrust faults (San Cayetano and Oakridge) bordering the Santa Clara River Valley. While such accumulation will in general follow the trend of the present producing fields located above the thrust faults, it will be coincidental if they should underlie present production. For this reason they cannot be considered deeper zone prospects in the ordinary sense, and in most cases the age of the prospective zones while at greater depth will be younger than those presently producing.

Capitan (97) and *Elwood* (98)—Although wells have been drilled into the Eocene in both these fields without finding production, the possibilities of the thick Eocene section which must underlie these fields cannot be considered as having been adequately tested.

Rincon (103), *Padre* (104), *San Miguelito* (105), and *Ventura Avenue* (106)—In none of these has the entire Repetto (Pliocene) section been penetrated. Deeper possibilities in the Pliocene are therefore present. Production can also be expected in the underlying Miocene, which produces in the Ventura Basin both east and west of these fields. Similarly, possibilities in Sespe (Oligocene) and Eocene beds also may be present. Although drilling to these formations will be deep, they appear to present some of the most promising deeper prospects in California.

Oak Canyon (118), *Holser Canyon* (119), and *Del Valle* (120)—These fields have not been tested below the Upper Miocene. Prospects for deeper production from older Miocene beds and particularly from the Eocene which produces to the south, Simi (113), and east Newhall (135) fields are a possibility. A deep test is in progress in the Oak Canyon field.

Oxnard (120)—Because of structural conditions it is likely that deeper production (stratigraphically) here will be outside the present producing area which is very small owing to limited development.

South Mountain (123), *Bardsdale* (124), *Elkins* (125), and *Shiells Canyon* (126)—These fields probably have some further deep possibilities above the Oakridge thrust fault. There are promising prospects for accumulation underneath the major thrust which passes below the four fields. Accumulation below the fault probably will not be affected by structural conditions above the fault. For this reason the deeper possibilities under these fields must be considered far more hazardous than is normally the case in deeper zone prospecting under a known field.

Newhall Potrero (128)—This field should have excellent deeper zone prospects for Miocene, Oligocene, and Eocene production. A deep test is now in progress.

Pico Canyon (129), *Towsley Canyon* (130), *Wiley Canyon* (131), and *Rice Canyon* (132)—These fields have deeper prospects in the equivalent of the Sesnon zone producing in the Aliso Canyon (134) to the south as well as from the Eocene producing in Newhall (135) to the northeast and Simi (133) to the southwest. A deep test is planned for Pico Canyon.

Aliso Canyon (134)—Several wells have been drilled to the Eocene without success. Further information about structural conditions may reveal a better location for a test of the Eocene.

Santa Maria Basin

Deeper possibilities in the Santa Maria Basin fields are largely prospects for accumulation in permeable rocks below the Monterey (Upper Miocene) where the oil

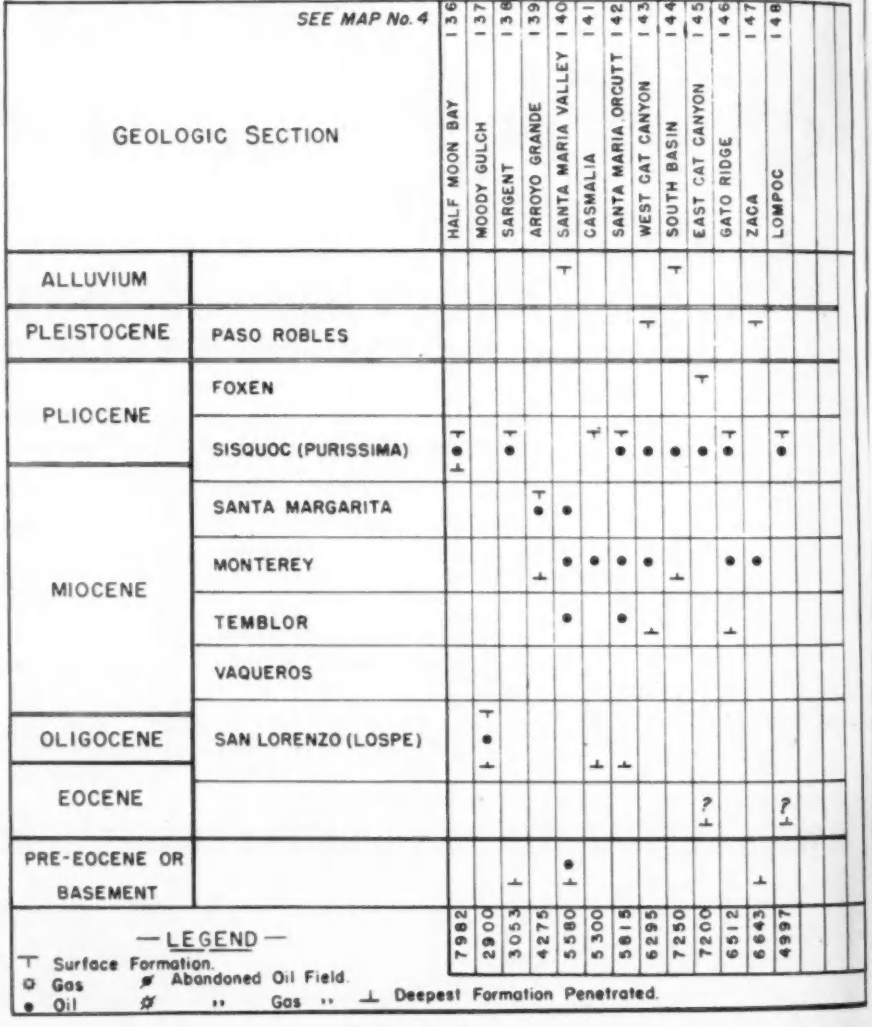

Chart for MAP No. 4

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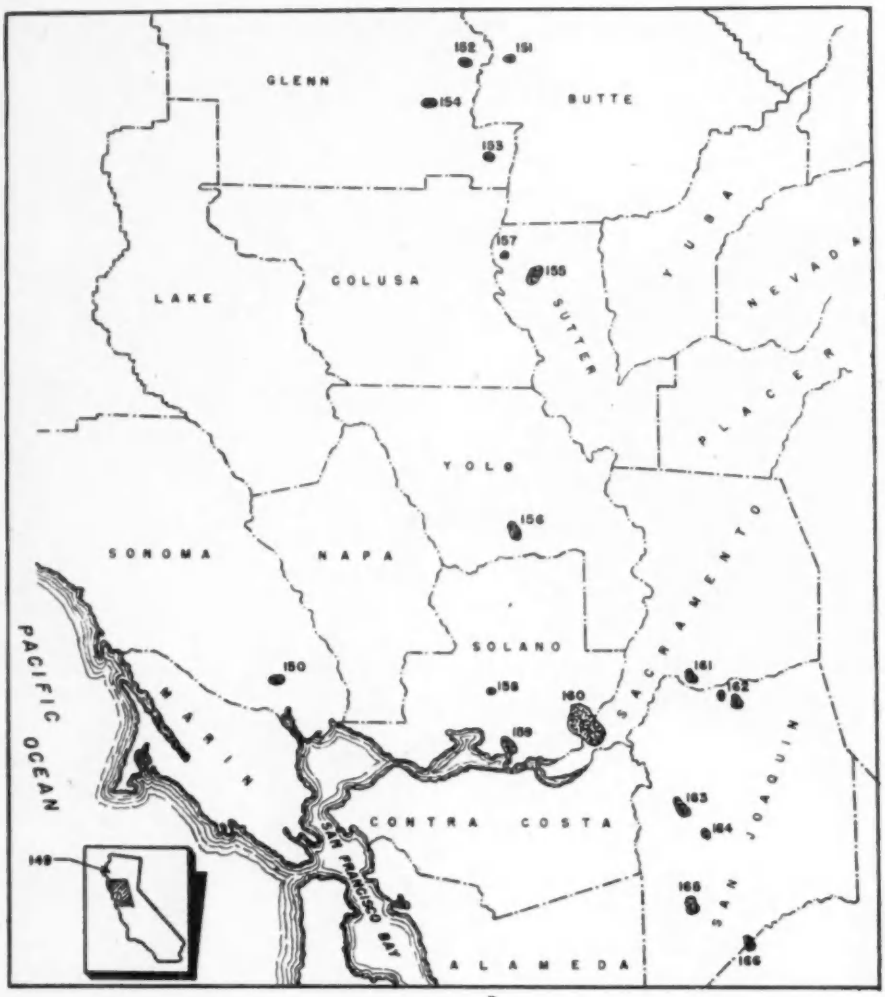

MAP No. 5

from Miocene shales had a chance to migrate into such older rocks. One such type of accumulation would be similar to the schist and shist conglomerate accumulation in the Venice (20) and El Segundo (21) in the Los Angeles Basin.

Since this type of accumulation does not necessarily follow the pattern of upper zones, it appears that several deeper tests would have to be drilled in order to test adequately this type of accumulation in each field. The following fields may have possibilities of this type: *Santa Maria Valley* (140), *Casmalia* (141), *Santa Maria-Orcutt* (142), *West Cat Canyon* (143), *East Cat Canyon* (145), *Gato Ridge* (146), and *Lompoc* (148).

Northern District Fields

Tompkins Hill (149)—This field which presently produces wet gas from beds of the Middle Pico (Pliocene) age should have good prospects for oil production from older Pliocene and possibly from Miocene sediments which may be present under the field.

Rio Vista (160)—In this gas field, by far the largest in the state, the entire Eocene section has not been penetrated. Because of the presence of gas in beds of Upper Cretaceous age in fields to the north and south, there is good reason to anticipate Cretaceous gas production. In view of the large size of the structure this appears to be the most important prospect for adding substantially to the gas reserves of the state by deeper drilling within known fields.

Most of the gas fields of the Northern District have penetrated and tested beds of Upper Cretaceous age. In some of these fields, only the uppermost sands in the Cretaceous have been productive. Until further drilling of deeper Cretaceous sands has been undertaken, most of the fields with appreciable anticlinal closure may be considered to have deeper possibilities.

Conclusions

History of California oil development shows the importance of deeper zone discoveries not only in adding to our reserves, but also in increasing current production rates.

Results of some of these deeper zone discoveries have far exceeded the most optimistic estimates made at the time of the original field discovery. Santa Fe Springs, Rosecrans, North Belridge, Sunset Midway, and Ventura Avenue are just a few examples of fields in which such has been the case.

The continued development of deeper zones created a challenge to the industry for improvements in drilling technique and equipment which the industry has met admirably. These improvements have made possible still deeper exploration until today we speak of 15,000-foot tests without batting an eyelash.

Until the full stratigraphic section has been penetrated in all California oil and gas fields, we may expect this development to continue, and, as a result, new reserves will be added to our supply.

It is hoped that this paper will call attention now to some of the remaining undrilled, deeper-zone prospects at a time when increased production and available reserves are urgently needed to carry on the war.

GEOLOGIC SECTION

		149 TOMPKINS HILL	150 PETALUMA	151 CHICO	152 ORD BEND	153 AFTON	154 WILLOWS	155 MARYSVILLE BUTTES	156 FAIRFIELD KNOLLS	157 COLUSA	158 POTRERO	159 SUISUN BAY	160 RIO VISTA	161 THORNTON	162 LODI	163 McDONALD ISLAND	164 ROBERTS ISLAND	165 TRACY	166 VERNALIS
ALLUVIUM				⊤	⊤	⊤	⊤			⊤		⊤	⊤	⊤	⊤	⊤	⊤	⊤	
PLEISTOCENE		⊤																	
PLIOCENE		⊤✿	⊤✿●						⊤										
MIOCENE								⊤											
EOCENE	NORTONVILLE														✿				
	DOMENGINE												✿						
	CAPAY								✿		⊤	✿	✿	✿					
	MEGANOS												✿						
PALEOCENE												⊤?	⊤✿			✿	✿		
CRETACEOUS	UPPER			✿	⊤✿	⊤✿	⊤✿	⊤✿	⊤	⊤✿	⊤✿			⊤		⊤		⊤✿	⊤✿
	LOWER																		
BASEMENT				⊥											⊥		⊥		
		7708	2140	7005	6346	5242	6014	7650	5181	3460	5334	8304	6792	8367	4495	8813	7014	9690	5506

— LEGEND —
⊤ Surface Formation.
✿ Gas ✿ Abandoned Oil Field.
● Oil ✿ " Gas " ⊥ Deepest Formation Penetrated.

Chart for MAP No. 5

Which of these 5

GATES V-Belts

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Practical Design of Water-Flood Projects

Availability of water supply ample for operating life of project and of a type that will not clog sand pores nor corrode equipment is primary task

THE first major requirement encountered in any water-flood project design, and one demanding primary consideration, is the availability of water supply which will be ample for the operating life of the project, and will not clog sand pores nor corrode equipment.

Amount of water required for complete development depends upon many more or less tangible factors which must be ascertained for each individual project. Core analysis taken from input and/or producing wells offer the first indicative data. From them may be obtained sand characteristics, effective permeabilities of sand, to water and oil, porosity, recoverable oil, amount of vacant pore space to be filled, etc. Generally speaking, (1) the reservoir structure and composition affect fluid movement in it, exerting primary controlling influences on water volume which may be injected during economic life and (2) viscosity, through its affect on fluid movement, ultimate residual saturation and project cost acts as a modifier of sand characteristic control.

Extreme Care Urged

Existence of oil, water and gas in a highly variable and complex structure naturally prohibits derivation of exact emperial formula concerning injection and recovery volumes. However formulas have been developed by various investigators which offer practical assistance in volume predictions. When used for flood design all theoretical calculations and flow formulas based on core data should be used as indicators and not dictators of future developments. Too many known and unknown variables are involved to risk investment and project future on generalized and qualified derivations unless done with extreme care and assurance that the reservoir in question may be theoretically and mathematically defined. Your particular reservoir may be a technical freak.

Essentially injected water volume predictions are fundamentally based on the sand's fluid conductivity and replacement of volume. Every sand contains a certain volume of pore space which basically is filled with oil, gas, connate or interstitial water and vacant space. In flooding, a portion of each is to be replaced by water. All vacant space within water migration limits, oil and gas above the residual remaining after flooding, and possibly a negligible amount of connate water must be replaced by injected water.

Water migration limits and hence the sand volumes flooded, depends to a major degree upon the development pattern used. Vacant space which must be replaced is obtained from core analysis. Space vacated by produced oil and gas is determined by (1) core analysis (2) bottom-hole pressure and oil samples for shrinkage data (3) laboratory flood tests on cores and (4) by conversion of all volume calculations to a common pressure base.

It is readily seen that initial volume requirement estimates must be based on data pertinent to each individual project and is a problem of volume, fluid and sand characteristics. Summation of published flood data shows projects average from 5 to 30 barrels of input water for one barrel of recovered oil over the entire flood life. Probably 10 to 15 barrels of water per barrel of oil are required on an average.

Required volumes are also dependent upon the flooding efficiency of the project. Daily injection volumes per well should be regulated to permit maximum efficiency of injected water in movement of oil. As stated in a previous article ("Practical Completion of Secondary Recovery Wells," THE OIL WEEKLY, July 17, 1944) proper input well completion by either packer settings or selective shooting offers material aid in controlling water movement. The objective of controlled injection volumes is that of minimizing by-passing or channeling of injected water from input to producer and assure efficient flooding of maximum volume of saturated sand.

Effect of Input Rate

Sands having higher saturation may be flooded faster than those with low saturation in that a smaller percentage of vacant space is offered, the higher fluid saturation tending to offer a more uniform front to the advancing flood. It is believed by many engineers, by way of illustration, that excessively high input rates may tend to shorten the effective width of the flood between input and producer and result in an ultimate pattern resembling a tear drop in outline, while accurately controlled rates permit a more circular flood pattern which eventually floods all sand except the "dead" zones located midway between producers. Such reasoning is definitely open to question. However each input well rate should be individually determined and regulated so that it floods out the sand volume it is eventually to flood at the same proportionate rate as other inputs.

Exact injection rates may best be determined by experimentation on the site, however initial approximations may be made from core analysis, precedence in the area, laboratory data or industry averages. Best results in projects to date has varied between 1½ and 5 barrels of water per vertical foot of exposed sand per day in each input.

It is logical to assume that viscosity plays an important role in the volume regulation, economic and recovery aspects of a project. Experimental work along this line has lead to injection of various solutions aimed at minimizing viscosity affect, among other reasons, but results to date indicate limited benefits. Importance of fluid viscosity in secondary recovery is today the subject of considerable investigation. Over a normal range it probably should be relegated to secondary consideration.

Injection pressures should be under the value required to lift the overburden. Surface injection pressure required to do this is roughly equal in pounds to the depth of the well in feet, the overburden exerting slightly more than one pound per square inch per foot of depth. In practice the safe maximum pressure should be determined by running injection characteristics or pressure versus injected volume relationships. Approximately a straight line relationship will exist until the overburden lifting pressure is reached. At that point there will be a sharp break in the line and water input rates will increase considerably at only small increases in pressure. This pressure should never be exceeded in actual operation.

Limits for Injected Volumes

Determination of injection pressure quite naturally brings up the question of whetеher or not the sand should be subjected to the highest safe working pressure or if volume should be regulated. Injected volumes are, of course, limited by pressure, well spacing, permeability, cross sectional area of sand and fluid viscosities. Fluid conductivity capacity of parallel strata in a sand will remain proportionately comparable regardless of pressure used. However in highly variable sands and presence of thief zones control should be exercised. In uniform sand the maximum pressure should be applied. In any event the problem is one of obtaining highest flooding efficiency in the shortest possible time.

Yuster combined a theoretical flow equation derived by Muskat with field data to arrive at the following equation, which is sufficiently accurate for prediction of plant capacity and water supply necessary for development, rate of water input and rate of oil recovery. Although it is common knowledge that injection rates will not remain constant during the life of a flood useage of this equation should afford fairly accurate predictions of average rate:

$$Q = \frac{.0001588\ K\ H\ P}{\text{Log}_{10}\ D - 1.6}$$

Where

Q = water input in barrels per day

K = average permeability of formation in Millidarcies

H = sand thickness in feet

P = pressure at sand face in pounds per square inch

D = water to oil well distance in feet.

From daily water input rates and core analysis the rate of reservoir flooding or volume replacement are predictable. By such a line of reasoning is thus

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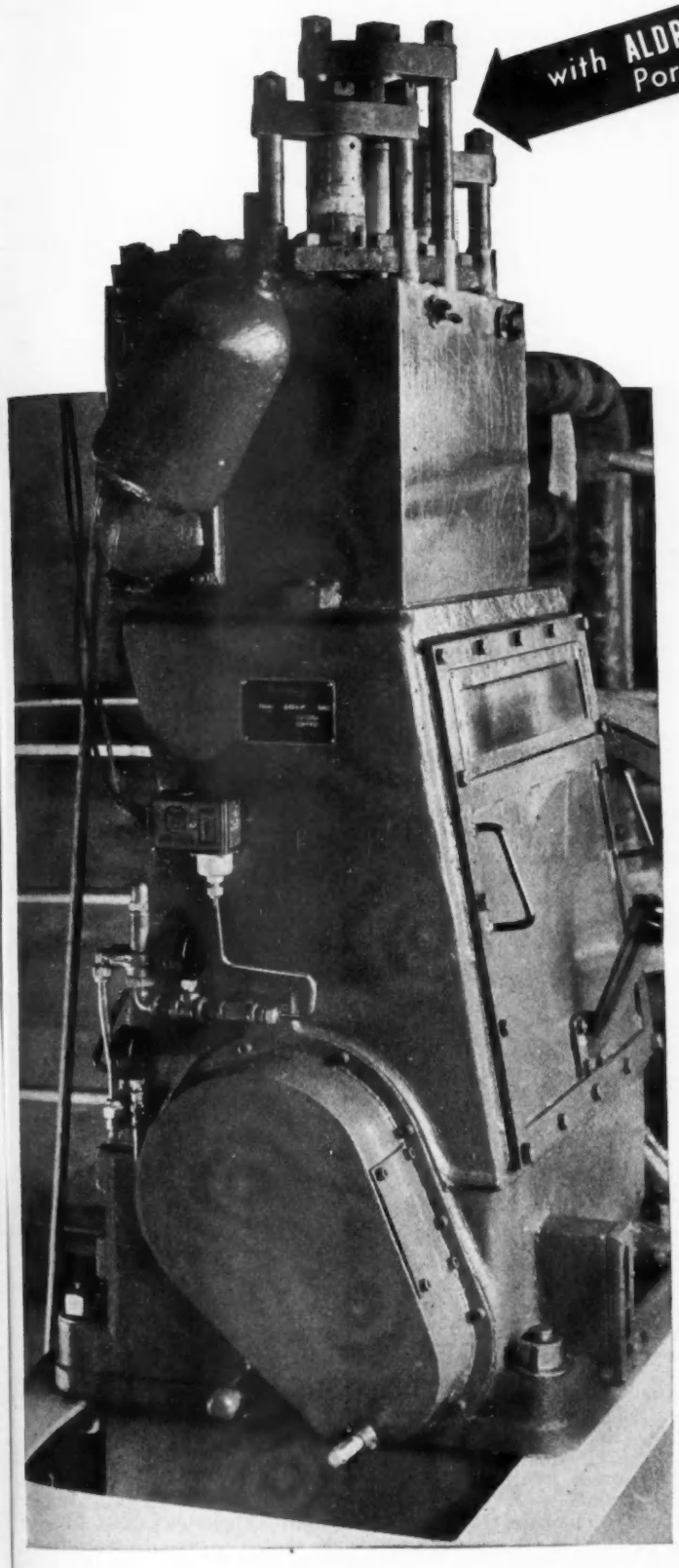

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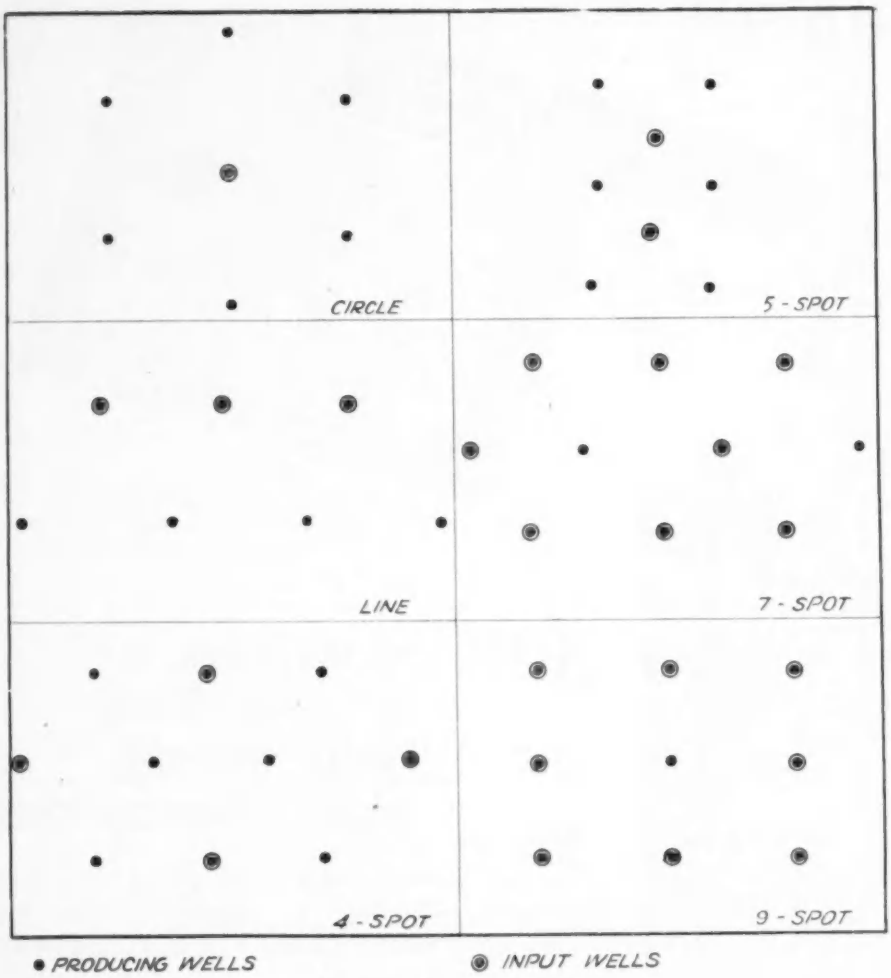


Patterns used in spacing wells

predicted injection rates and water requirements.

After being assured of an ample water supply the next logical question is whether or not the water is suitable for flood purposes. As stated previously the water should not plug sand pores nor corrode equipment.

Chemically pure water is rare and water falling as rain more nearly approaches purity than any which may be found under natural conditions. Between the times after coming in contact with the earth's surface and when used by a flood operator it picks up many "impurities," some of which must be taken from the water before being used.

Water analysis furnishes the operator with information regarding the suitability of the water and treatment procedure required. Samples should be taken in glass-stoppered bottles, two quarts or larger and sent immediately to the testing laboratory. Labels should state time of sampling, source, date, purpose for which water is to be used and any other data required by analyst. Sample bottles should be absolutely clean and the sample taken so water is not exposed to air.

Water analysis reports are usually given in parts per million, or pounds per million pounds. In other words water reported as having 9 parts of iron per million has 9 pounds of iron in one million pounds of water and other material. Other methods of reporting are parts per hundred thousand, grains per gallon, grams per liter or milligrams per liter (same as parts per million).

A typical analysis, as an illustration, will give in parts per million:

1. Suspended matter
2. Turpidity
3. Total dissolved solids
4. Sodium salts
5. Iron as Fe
6. Ph
7. Silica
8. Iron oxide
9. Free carbon dioxide
10. Hydrogen sulfide
11. Total hardness (as $CaCo_3$)
12. H (Comp.) (as $CaCo_3$)
13. Calcium hardness (as $CaCo_3$)
14. Magnesium hardness (as $CaCo_3$)
15. Alkilinity (M) (as $CaCo_3$)
16. Alkilinity (P) (as $CaCo_3$)
17. Hypothetical combination

Suspended matter is the amount of solid material in the water. This should be removed to prevent clogging of pore spaces in the sand. Filtration after use of a coagulant such as alum is satisfactory. If the coagulant isn't used to form a floc mere filtrataion will not remove all suspended matter.

Turpidity refers to the dirtiness of the water and is usually affected by above operations.

Total dissolved solids refers to amount of material left after a water sample is evaporated to dryness, including both suspended and solution matter.

Iron is a most important part of any analysis because of its pore clogging abilities. Iron or Fe refers to iron in solution. Aeration, or being exposed to air and agitation, brings the solution iron out as a solid reddish brown material.

Ph value is a numerical indication of whether a solution is alkaline or acidic. Technically the Ph number is the logarithm of the reciprocal of the hydrogen iron concentration and acidity or alkalinity depends on whether hydrogen or hydroxolions predominate. A Ph value under 7.0 acidic, and over 7.0 alkaline. Ph value control of flood water is very important.

Silica is sand occuring as solid material suspended in solution.

Iron oxide is the well known iron rust, and must be controlled in that it clogs pore spaces and may require hydrochloric acid treatment for removal if forced far back in to a sand.

Carbon dioxide may unite with water to form metal corrosive, carbonic acid and cause certain salts to go into solution. Pressure release on injected water in sand near producing wells may cause carbon dioxide to come out of solution, precipitation of salts and plugging of sand pores.

Total hardness may be divided into temporary or permanent hardness. Total hardness refers to the amount of soap in a soap solution, that will be converted to an insoluable curd by definite amounts of water. Hardness is caused by calcium and magnesium salts in water. Permanent hardness is determined after boiling and filtering water before soap reaction on a similar soap solution and temporary hardness is the difference between permanent and total. It is believed by some that soft water more effectively floods a sand and increases oil recovery during time allotted for flood.

Calcium and magnesium hardness are both commonly reported on calcium basis and are computed by amounts of both determined by analysis.

Alkilinity refers to amount of carbonate, caustic or bi-carbonate carried by water. M alkilinity denotes bicarbonate alkilinity and P to phenolphthalein, or the indicator used for alkilinity determinations. Waters of high alkilinity are not corrosive, and 100 parts per million should insure against acid corrosion.

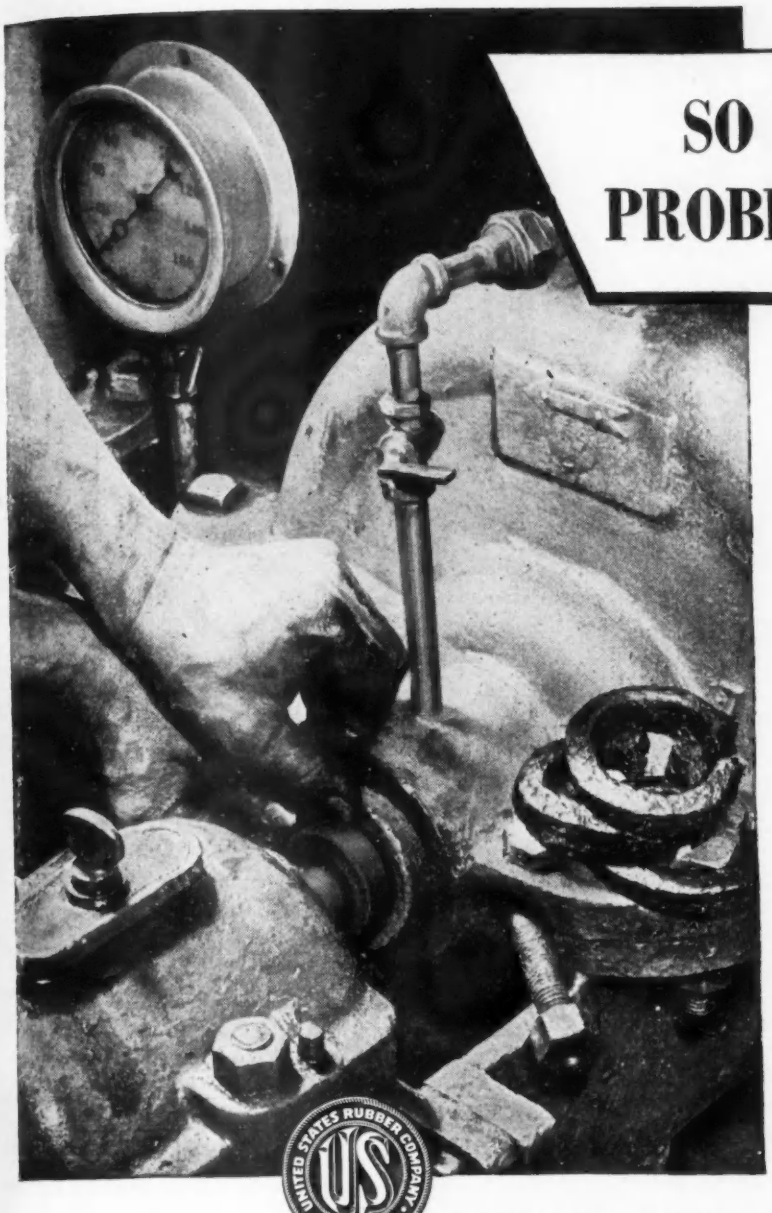
Hypothetical combinations are the combinations of radicals or ions which might be expected if the compounds were in solution as compounds only.

Items to be Determined

There are as a rule probably seven major items determined by analysis which are of importance from a flooding standpoint. They are (1) corrosive properties, (2) organic growths, (3) iron, (4) suspended matter, (5) corrosive gases, (6) manganise, (7) Ph value.

Important items in corrosion are dissolved oxygen, dissolved salts and hydrogen ion concentration. Corrosion of a metal occurs in presence of water if the metal is capable of replacing any of the positive ions in the chemical compounds present in the water. This would mean simply the iron in pipe and the hydrogen in water. Dissolved salts are important since increased concentration of such require greater alkilinity to inhibit corrosion. Dissolved oxygen increases corrosion action. Acidic corrosion is minimized by increasing alkilinity to form a protective coating on pipe. A Ph value of 7.2 should accomplish this. Exact amounts of alkali required should be determined by trial. Ph con-

• CONTINUED ON PAGE 56



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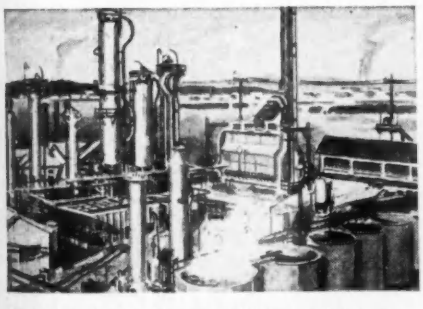

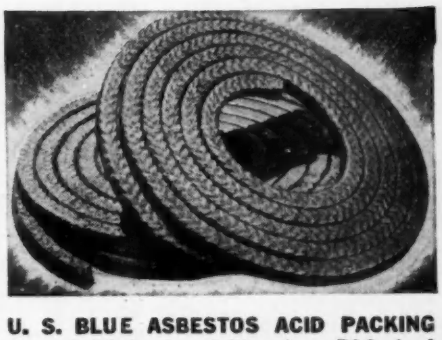

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Exploration Increased; August Record Good

The Oil Weekly's monthly record of exploratory drilling and appraisal of new fields, pay zones, and field extensions.

Data compiled by District Editors and coordinated by L. J. LOGAN, Associate Editor

EXPLORATORY drilling was carried on during August at an exceptionally high level, and results were gratifying. New fields and new pay zones were discovered in large numbers, and there were numerous extensions of established fields.

For the first time, exploratory development was proceeding at a rate equaling that sought by the government for this year, with exploratory completions averaging 97 per week or a little over the goal of 5000 per year. However, actual attainment of the goal would require further expansion to offset the deficiencies of earlier months.

Recorded herewith for August are 91 successful exploratory well completions, largest number for any month this year. These included as usual many discoveries and extensions of limited importance, but among them also were at least a dozen strikes of special interest or value.

Although Texas heretofore has yielded oil from formations of nearly all geologic ages, discoveries of August added two new pay formations for the state. In eastern Texas, Bowie County got its first oil production and the first Smackover lime production for the state was established through discovery of the Eylau field; while in West Texas a Crane County wildcat, opening the Crossett field, became the first Devonian producer in the state. Also during the month a new region was opened for Edwards lime production when the Charlotte field was discovered in Atascosa County, South Central Texas.

From the standpoint of reserves discovered, an outstanding strike in Texas in August was the opening of the South Tyler field, Smith County, eastern Texas. Producing 46 gravity oil from Rodessa lime at 9919-9929 feet and with four prospective pay zones between 9556-9961 feet, the discovery appears to be a major field. In West

■ CONTINUED ON PAGE 56

(Tables on pages 53, 54, 55)

Summary of Results of Exploratory Drilling

ITEM	July 1944	August 1944	EIGHT MONTHS: JANUARY-AUGUST 1943	1944	Percent Dif.
Oil Discoveries	29	49	263	301	+ 14.4
New Fields	20	38	176	208	+ 18.2
New Pays	9	11	87	93	+ 6.9
Distillate Discoveries	5	3	16	27	+ 68.7
New Fields	4	2	12	19	+ 58.3
New Pays	1	1	4	8	+ 44.4
Gas Discoveries	10	21	43	85	+ 97.7
New Fields	7	19	35	74	+111.4
New Pays	3	2	8	11	+ 37.5
Total Discoveries	44	73	322	413	+ 28.3
Extensions to Fields	19	18	99	122	+ 23.2
Oil Fields	17	14	89	91	+ 2.2
Distillate Fields	1	1	2	8	+250.0
Gas Fields	1	3	8	23	+187.5
***Total Prod. Tests**	63	91	421	535	+ 27.1
†Dry Holes	314	395	1921	2373	+ 23.5
(Weekly Average)	78	79	55	66	+ 20.0
Wildcats	299	383	1888	2302	+ 21.9
New Pays	2	1	....	13	.....
Outposts	13	11	33	58	+ 75.8
†Total Expl'tory Tests	377	486	2342	2908	+ 24.2
(Weekly Average)	94	97	67	81	+ 20.9
Percent Productive (Weekly Average)	17.0	18.6	17.9	18.5	.....
Percent Dry (Weekly Average)	83.0	81.4	82.1	81.5	.....

* Data for Calendar Month.

† Dry hole completions are from weekly reports and totals represent completions for 4 weeks in July, 1944; 5 weeks in August, 1944; 35 weeks in Jan.-Aug. 1943, and 36 weeks in Jan.-Aug. 1944.

Results of Exploratory Drilling in August, 1944 and First 8 Months, 1944-1943, by Districts

State or District	AUGUST, 1944														FIRST EIGHT MONTHS, 1944															
	Productive Tests									Unproductive Tests				Total Exploratory Tests	Productive Tests								Total Productive		Unproductive Tests			Total Dry		Total Exploratory Tests	
	New Fields			New Pays			Extensions			Total Productive	Wildcats	New Pays	Outposts	Total Dry		New Fields			New Pays			Extensions			8 Mo. 1944	8 Mo. 1943	Wildcats	New Pays	Outposts	8 Mo. 1944	8 Mo. 1943	8 Mo. 1944	8 Mo. 1943
	Oil	Gas	Dis.	Oil	Gas	Dis.	Oil	Gas	Dis.							Oil	Gas	Dis.	Oil	Gas	Dis.	Oil	Gas	Dis.								
Alabama											4			4	4	1									1	....	9	....	2	11	2	12	2
Arizona																											6	....	....	6	....	6	....
Arkansas	1									1	8		1	9	10	2		2				4			8	11	48	....	1	49	45	57	56
California	1	2			1					4	28			28	32	11	8		4			4	1		28	12	203	....	....	203	106	231	118
Colorado					1					1					1	1				1		1			3	1	4	....	....	4	3	7	4
Florida																											1	....	....	1	1	1	1
Georgia											3			3	3												5	....	....	5	2	5	2
Illinois	6		1	1			4			12	44			44	56	14		1	27			16			58	86	245	....	....	245	234	303	320
Indiana											8			8	8	5			1			2			8	6	34	....	....	34	61	42	67
Iowa																											2	....	....	2	3	2	3
Kansas	5	4					1			10	40			40	50	36	9					4			49	44	285	....	6	291	270	340	314
Kentucky	3									3	10			10	13	10	5	4				2			21	14	79	....	....	79	62	100	76
Louisiana	1		1							2	9		6	15	17	5	2	5	8	1	2	3		1	27	30	77	....	16	93	66	120	96
North	1		1							2	6		6	12	14	2	1	1		1	1	1		1	8	9	46	....	12	58	51	66	60
South											3			3	3	3	1	4	8		1	2			19	21	31	....	4	35	15	54	36
Michigan	2	1					2			5	19			19	24	9	1					2			12	22	147	1	....	148	125	160	147
Mississippi											5			5	5	1									1	1	49	....	11	60	38	61	39
Missouri											3			3	3											3	4	....	....	4	13	4	16
Montana				1						1	4		1	5	6		1		1			1			3	2	17	....	1	18	10	21	12
Nebraska											5			5	5												7	....	....	7	25	7	25
New Mexico		1								1	6			6	7	2	3		1			1			7	4	35	....	....	35	33	42	37
Ohio		3						3		6	4			4	10	1	14					1	15		31		47	....	....	47	....	78	....
Oklahoma	4	3		1			2			10	33			33	43	20	11		3	2		10	2		48	39	147	....	3	150	171	198	210
Tennessee																											4	....	....	4	1	4	1
Texas	15	3		7		1	5		1	32	143		2	145	177	85	18	7	44	6	6	38	5	7	216	136	834	11	17	862	644	1078	780
E. Tex. Bord.											5			5	5								3	2	5	2	10	....	....	10	3	15	5
Rest of E. Tex.	2			1						3	3			3	6	5			6		1				12	6	77	1	1	79	58	91	64
No. Tex.	3			2			2			7	29			29	36	23	1		13	1		6			44	39	200	1	....	201	164	245	203
W. Cent.	1			2						3	14			14	17	9			7	1					17	12	73	1	....	74	80	91	92
West	5			1			3			9	27		1	28	37	15	2		4			14			35	14	122	6	5	133	46	168	60
Panhandle																											5	1	....	6	2	6	2
Upper Coast				1						1	13		1	14	15	6	2	2	3	2	2	6	1	1	25	17	84	....	3	87	61	112	78
Lower Coast	3	2				1			1	7	28			28	35	19	9	4	7	1	3	4	1	3	51	30	124	....	5	129	98	180	128
Southwest		1								1	15			15	16	6	4	1	4	1		8			24	15	102	....	3	105	102	129	117
S. Central	1									1	9			9	10	2								1	3	1	37	1	....	38	30	41	31
Utah												1		1	1													1	....	1	....	1	....
West Virginia		2								2	1			1	3		2								2		2	....	....	2	....	4	....
Wyoming				1						1	6		1	7	8	5			4	1		2			12	10	11	....	1	12	6	24	16
Total U. S.	38	19	2	11	2	1	14	3	1	91	383	1	11	395	486	208	74	19	93	11	8	91	23	8	535	421	2302	13	58	2373	1921	2908	2342

New Oil and Gas Fields and New Pay Horizons Discovered in the United States in August, 1944

New Oil and Gas Fields and New Pay Horizons Discovered in the United States in August, 1944

Also Important Extensions to Established Fields

COUNTY	FIELD	COMPANY, WELL AND LOCATION	Date Spudded	Date Completed	Total Depth (Feet)	Completion Horizon (Feet)	[1]Name, Character and Age of Producing Formation	[2]Initial Production Method and Choke	Gravity of Oil	[3]Structure: [4]Method of Discovery	Tentative Evaluation of Discovery or Extension
		ARKANSAS—New Oil Field									
Nevada		Berry Asphalt Co.'s T. C. McRae Est. 5, 5660 fr n&wl sec se 4-14-20	.....	8- -44	1211	-1211	.....	Open hole 20.	....	.....	Unimportant.
		CALIFORNIA—New Oil Field									
Kern	Gosford	Tide Water's KCL 44-22, se se nw 23-30s-26e, ne Ten Section, nw Canfield flds.	5- 5-44	8-12-44	8152	8005-7990 7950-7935	Stevens sd, Mio.	P 156; 8 wtr.	38	Dome; seis.	Edge well; pool not expected to exceed half sect.
		CALIFORNIA—New Gas Fields									
Kings	Alpaugh	Standard's Cutter Unit 1, nw sw sw 29-23s-22e, 7 mi w Alpaugh	7-30-44	8-28-44	3630	3480-3555	"C" zone sd, Plio.	F 7.5 mln.	gas	Ant; geol.	Not important itself, but will give incentive to further prospecting of dist.
Solano	Starkey	Amerada's Starkey Fee 1, c sw¼ 2-6n-2e, 12 mi nw Rio Vista gas fld.	2-10-43	8-28-44	9434	4550-4600	Starkey sd, Eoc.	F 22.5 mln,⅞"	gas	D; geol.geop.	Strike may prove very important.
		CALIFORNIA—New Gas Pay									
Solano	Rio Vista	Standard's Perry Anderson H-6, nw sw sw 36-4n-2e	6-10-44	8- 3-44	5856	5735-5795	Anderson sd, Eoc.	F 16.7 mln;⅝"	....	Done; geol.	Rich new zone expected to prove large addition to reserves.
		COLORADO—New Gas Pay									
Rio Blanco	White River	Frontier Ref. Co.'s Govt 1, csl nw nw 32-2n-96w	.....	8- -44	7005	5560-5928	Mesa Verde sd.	.....	gas	.....	Numerous sands in Mesa Verde 5560-7005 ft. Tested 25 b/d (non-comrcl) high grav. oil 5558-5976 ft. Pb 5928 ft., comp. as gas well.
		ILLINOIS—New Oil Fields									
Clay	Sailor Spgs. E.	Magnolia's Rinnert 1, ne ne 33-4n-8e	8- 5-44	8-29-44	2718	2690-2718	Cypress sd, Miss.	P 32	....	.....	Good possibilities of expansion. Dry holes testing Cypress bound possible producing area 1¾ mi to nw, 2 mi to ne, 1¾ mi to n.
Hamilton	Thackeray	Nat'l. Assn Pet.'s Johnson 2, ne sw se 10-5s-7e	6-27-44	8- 8-44	3402	3394-3401	Aux Vases sd, Miss.	P 60	....	.....	Probably small. Dry holes testing Aux Vases located ½ mi n, ½ mi se, 1¾ mi sw.
Jefferson	Roaches, N.	Texas Co.'s Kasban 1, se se nw 8-2s-1e	6-20-44	8-15-44	2255	2103-2255	Rosiclare sd, Miss.	221; 10 wtr.	....	.....	This field since disc. has 2 Bethel wells to nw. Dry holes testing Rosiclare located ½ mi e, 1¼ mi s, 2 mi ne. Proved acreage amts. to ½ sq. mi.
Jefferson	Boyd	Cameron's Bizot 1, ne ne nw 30-1s-2e	.....	8-22-44	2063	2050-2063	Bethel sd, Miss.	P 167	....	.....	Dry holes testing Bethel located 1 mi e, 1 mi s, ½ mi w. Will probably be small.
Lawrence	Sumner	Texas Co.'s Smith 1, se se ne 16-4n-13w	6-25-44	8-22-44	2359	2261-2359	McClosky li, Miss.	P 65	....	.....	Probably small. Located w flank La Salle anticline, 2½ mi w Lawarence Co. field.
Richland	Calhoun	Phillips's Jennings 1, ne ne se 6-2n-10e	7-12-44	8-22-44	3280	3166-3280	Levias sd, Miss.	P 178	....	.....	Field bounded by dry holes testing Levias 1¼ mi se, 1¾ mi sw. Possibilities favorable for moderate sized field.
		ILLINOIS—New Oil Pay									
Jefferson	Roaches, N.	Texas Co.'s Kasban 2, nw ne sw 8-2s-1e	7-16-44	8-29-44	2138	1933-2138	Bethel sd, Miss.	195	....	.....	Limited by dry holes testing Bethel ¼ mi w and ¾ mi e.
		ILLINOIS—Oil Field Extensions									
Clay	Schnell	Wicklund's McCaullay 2, se nw se 23-3n-8e	6-26-44	8- 8-44	2976	2974-2976	McClosky li, Miss.	225	....	.....	Extends pool ¾ mi w. Further w expansion doubtful due to dry hole ¼ mi w.
Wabash	Keensburg, S.	Fox Bros' Thompson 2, nw c 3-3s-13w	7- 8-44	8- 8-44	1161	1147-1161	Sand, Penn.	P 35; 30 wtr.	....	.....	Apparently extends pool 1½ mi s.
Wabash	Mt. Carmel	Shell's Dunkel 1, sw nw sw 33-1n-12w	7- 4-44	8- 8-44	2435	2109-2116	Cypress sd, Miss.	P 35; 14 wtr.	....	.....	Extends pool ½ mi n; makes possibilities favorable between this pool and Patton and Patton, W.
White	N. Haven, N.	Sohio's Pierce 1, sw nw se 3-7s-10e	7-13-44	8-22-44	2186	2176-2189	Tar Springs sd, Miss.	P 18	....	.....	Probably limited. Dry holes testing Tar Springs located ½ mi sw, ¾ mi ne.
		ILLINOIS—New Distillate Field									
White	N. Haven, N.	Sohio's Union Central Life Ins A-1, se ne nw 10-7s-10e	6-29-44	8- 1-44	2183	2179-2183	Tar Springs sd, Miss.	P 40	....	.....	May have area of 1 sq mi. Dry holes testing Tar Springs located ¼ mi n, ½ mi sw, 1½ mi w.
		KANSAS—New Oil Fields									
Ellsworth	E. Bloomer	Ingling & Alpine's Murray 1, ne c 18-17s-10w, 1 mi e Bloomer pl.	.....	8- 8-44	3332	3309-3332	Arbuckle li, Ord.	P 35	....	Anti; dr.	Fair discov; likely to yield 5,000 bbls. per ac.
Rice	Unnamed	Herndon Drlg. Co.'s Springers Est. 1, sw nw se 11-19s-10w	.....	8-274-4	3299	3009-3017	Lansing li, Penn.	S 60; 60 wtr.	....	Anti; dr.	May link up Brandenstein, Doran pools.
Stafford	Unnamed	W. P. Faulkner's Cadman 1, se se nw 4-25s-13w, 2½ mi se St. John pool.	.....	8-15-44	4088	4075-4088	Viola li, Ord.	P 25	38	Ant; seis, sub.	Considered small pool.
Woodson	Unnamed	Ed Dunn's Switzer 1, sw nw nw 2-24s-15e, 3 mi nw Vernon pool	.....	8-23-40	1517	1490-1517	Miss. li, Miss.	P 25	....	Random dr.	Considered unimportant.
Woodson	Unnamed	Ackiman & Brador's Mulson 1, ne c 3-24s-143, 1 mi w Hoagland pl.	.....	8-16-44	1660	1645-1660	Miss. li, Miss.	P 10	....	Str. Trp.	Unimportant.
		KANSAS—Oil Field Extension									
Barton	Ainsworth	Sohio's Lang 1, nw ne ne 36-16e-13w	.....	8-18-44	3363	3352-3355	Lansing li, Penn.	P 50	....	Ant; seis,sub.	1 mi e extension.
		KANSAS—New Gas Fields									
Barber	Unnamed	J. M. Huber's Gant 1, C nw 32-30s-13w, 2½ mi n Lake City pool	.....	8-26-44	4568	4617-4621	Viola li, Ord.	F 32 mln.	gas	Ant; seis, sub.	Important strike; may cover 2 or 3 sects.
Barber	Unnamed	Dickey Oil Co.'s Hargis 1, sw se 3-31s-14w, 2½ mi ne Skinner, nw pool.	.....	8-14-44	4417	4394-4417	Maquoketa li, Ord.	F 4 mln.	gas	Str tr; seis,sub.	May develop oil; shows oil spray.
Finney	Unnamed	Carter's Miller 1, ne c sw 26-22s-34w, 12 mi n Hugoton gas pool	.....	8-23-44	2833	2608-2633	Herrington li, Perm.	F 1 mln.	gas	Pinchout on M, ran dr.	Unimportant.
Stafford	Unnamed	J. J. Lynn's Cornwell 1, se c 3-24s-15w, 1¼ mi nw Macksville pool	.....	8- 9-44	4120	4114-4120	Arbuckle li, Ord.	F 10 mln	gas	Ant; sub, dr.	May become fairly large gas pool.
		KENTUCKY—New Oil Fields									
Henderson	Powell's Lake	Gulf's Rankin 1, 16-Q-20	.....	8- -44	2281	1811-1824	Waltersburg sd.	P 69	....	Dr.	.....
Union		Texas Co.'s Culver 1, 12-P-20	.....	8- -44	2710	2522-2526	O'Hara	P 13	....	Dr.	.....
Webster	E. Clay	Carl Sneff's Page 1, 9-L-21	.....	8- -44	1026	1003-1026	Pennsylvania sd.	.....	....	Dr.	.....
		NORTH LOUISIANA—New Oil Field									
De Soto		J. A. Johnson's J. J. Guy 1, c sw ne 3-11-13w	.....	8- -44	2736	2728-2736	.....	F 50; ⅛"	44	.....	Single-well reserve 60,000-80,000 bbls.
		NORTH LOUISIANA—New Distillate Field									
De Soto	Spider	A. W. Phillips-G. C. Schoonmaker's Anthony A-1, 830 fr sl 660 fr el ne 9-11-14w.	.....	8- -44	5008	4876-4882	Lime	F dist.	gas	Ant; sub.	Area unknown; gas-dist. reserve.

• CONTINUED ON PAGE 54

COUNTY	FIELD	COMPANY, WELL AND LOCATION	Date Spudded	Date Completed	Total Depth (Feet)	Completion Horizon (Feet)	[1]Name, Character and Age of Producing Formation	[2]Initial Production Method and Choke	Gravity of Oil	[3]Structure: [4]Method of Discovery	Tentative Evaluation of Discovery or Extension
		MICHIGAN—New Oil Fields									
Allegan	S. Monterey	A. W. Winchester's Fleecer 1, n½ ne nw 27-3n-13w, Monterey twp.	7- 3-44	8-10-44	1624	1621-1624	Traverse li, Devo.	P 79; 5 wtr.	40	Coral reef; geol.	Probably small area. 2 mi s Monterey pool.
sabella	Coldwater	Sohio's Cummings 1, n½ nw nw 33-16n-6w, 6 mi n Sherman fld.	6-27-44	8-12-44	3698	3694-3698	Dundee dolo, Devo.	F 189; 4/64"	46	Ant; geol, cd.	Structure data indicate 800-1500 ac, 15 mln. bbls.
		MICHIGAN—Oil Field Extensions									
Mecosta	Fork	Sun's Church 1, s½ sw sw, 1-16n-8w, 1 mi w Fork fld.	7- 6-44	8-22-44	3917	3916-3917	Dundee dolo, Devo.	F 1520; ¼"	43	Ant; geol.	May double 1,800 ac area heretofore productive.
Mecosta	Fork	Smith Pet. Co.'s Buss 1, s½ nw ne 16-16n-7w, 1 mi ne fld.	6-21-44	8-21-44	3781	3778-3781	Dundee dolo, Devo.	P 65; 5 wtr.	43	Ant; geol.	Structurally low well, not regarded important.
		MICHIGAN—New Gas Field									
Newaygo	Big Prairie	Taggart Bros. Co.'s Consumers 1, c se 16-13n-11w.	8- 1-44	8-11-44	1045	1035-1044	Michigan stray sd, Miss.	F 4.5 mln.	gas	Ant; geol.	7 mi s Goodwell field.
		MONTANA—New Oil Pay									
Pondera	Midway	R. C. Tarrant's Bouma 1, ne ne ne 31-28n-1w.	.....	8- -44	1710	1690-1704	Sunburst sd.	P 15; & wtr.	....	.....	.....
		NEW MEXICO—New Gas Field									
Eddy	.....	Martin Yates's F. W. Stebbins 1, c sw sw 29-20s-29e.	6-12-44	7-27-44	931	710- 931	Yates sd, Perm.	F 5.7 mln.	gas	Ant; geol.	Not important. 2½ mi se Russell oil field.
		OHIO—New Gas Fields									
Holmes	Washington Twp.	Carl Robinson's F. A. Ulman 1, sec. 6.	.....	8- -44	2926	2884-2923	Clinton sd.	F 0.8 mln.	gas	.....	.....
Morgan	York Twp.	H. K. Porter's N. D. Pletcher 1-C, sw ne sec. 30.	.....	8-15-44	4053	4031-4053	Clinton sd.	F 4.7 Mln.	gas	.....	Attractive area between Brush Crk, Crookville fields.
Summit	Norton Twp.	J. C. Steiner's D. B. Anderson Fee 1, lot 22, Norton twp.	.....	8-18-44	3400	3386-3391	Newburg, sd.	F 0.6 mln.	gas	.....	.....
		OHIO—Gas Field Extensions									
Morgan	Bloom Twp.	Industrial Gas Co.'s Gifford-Stewart 1, sec. 9.	.....	8- -44	4504	4475-4504	Clinton sd.	F 0.35 mln.	gas	.....	½ mi e extension.
Muskingum	E. Zanesville	E. O. White's Bonifield-Walker 1, 4th qr s, Washington twp.	.....	8- -44	3914	3883-3914	Sand.	F 5.2 mln.	gas	.....	½ mi n extension.
Stark	Sandyville	Hanley & Brid's Charles C. Ream 1, sec 27, Canton twp.	.....	8- -44	4744	4685-4710	Clinton sd.	F 1.6 mln.	gas	.....	Extends field 2 mi n.
		OKLAHOMA—New Oil Fields									
Hughes	Unnamed	Phillips' Meadors 1, se nw se 14-9n-9e.	.....	8- 3-44	3325	3288-3300	Gilcrease sd, Penn.	F 124	37.1	Str tr; sub.	Undetermined. 6 mi nw Wetumka.
Okfuskee	Unnamed	Doak & Hughes' Long 1, se nw sw, 17-12n-10e, 1 mi se Morse.	.....	8-16-44	3195	3183-3195	Cromwell sd, Penn.	P 10	....	Small ant; sub.	Unimportant; may extend over 200 ac.
Pontotoc	Unnamed	J. L. Shaw's Jackson 1, ne ne sw, 32-5n-6e.	.....	8- 1-44	2925	1907-1940	Cromwell sd, Penn.	S 13; 21 wtr.	27	.....	Considered unimportant; 2 mi sw Conservation area.
Garfield	Unnamed	Ace Gutowsky's Lee 1, sw sw 18-24n-5w.	.....	8-14-44	5938	5410-5450	Prue sd, Penn.	P 8	....	Sd. lens, dr.	Unimportant; 4 mi e Kremlin County.
		OKLAHOMA—New Oil Pay									
Carter	Caddo	Pure's Taylor 1, nw nw 26-3s-1e.	.....	8- 3-44	5371	5350-5371	Bromide sd, Ord.	F 137;123 wtr.	....	Flt ant; geol.	On steep structure; 3 Ord. dry holes to se; unimportant.
		OKLAHOMA—Oil Field Extensions									
Oklahoma	W. Edmond	Denver Prod & Ref's Holmes 1, sw ne 34-14n-4w.	.....	8-10-44	7215	6498-6522	Bois d'Arc li, Devo.	F 60; 57 wtr.	....	Str tr; dr.	1½ mi sw extension; apparently on edge structure.
Creek	Hickory Grove	Sinclair's Watson 1, sw ne se 34-15n-7e.	.....	8-10-44	3947	2622-2641	Prue sd, Penn.	F 220	....	Str tr; sub.	¾ mi n extension; Prue sd prolific.
		OKLAHOMA—New Gas Fields									
Lefore	Unnamed	LeFlore G & Elec's Tompos 1-B, c sw sw 31-19n-27e, 2 mi s Watts ar.	.....	8-30-44	4800	4798-3800	Atoka sd, Penn.	F 0.25 mln.	gas	Flt ant; seis, sub.	Steeply folded structure limits area.
Okmulgee	Unnamed	C. L. Long's Anthony 1, sw sw sw 33-16n-12e.	.....	8- 8-44	1082	1048-1080	Salt series sd, Penn.	F 1 mln.	gas	Str tr, ran dr.	Unimportant. 1 mi n N. Beggs dist.
Pittsburg	Unnamed	Public Service's Horton 1, se nw nw, 19-7n-13e, 2 mi w Scipio.	.....	8-11-44	2524	2373-2520	Hartshorne sd, Penn.	F 1 mln.	gas	Ant; sub.	May cover about 800 acres.
		EAST TEXAS—New Oil Fields									
Bowie	Eylau	Barnsdall-Sohio's Louis Heilborn 2, 696 ft ewl, 670 ft nsl 97.97-ac tr, M. H. Janes sur, A-304, 5½ mi sw Texarkana, 9½ mi w by s Smackover gas-dist well, nearest prod. in Miller Co., Ark.	5-15-44	8-15-44	7716	7710-7714 (liner)	Smackover li, Pre-Trinity.	F 155; ¼" Gas/oil 8050/1	41.4	Geop, geol.	First Smackover lime producer in Texas and first producer for county. Well only 800 ft w by s of 7836 ft Smackover failure of owners. Tests checked close, discounting idea of faulted structure, with producer gaining 35 to 53 ft structural relief on lower beds. Productive area speculative in view nearness dry hole.
Smith	S. Tyler	Phillips Pet. Co.'s W. J. McMinn 1, 660 ft out ne c 180-ac tr, or 660 ft snl and 2250 ft ewl of Mary M. Long sur, 10½ mi w by s Chapel Hill fld.	10-17-43	7-28-44	10017	9918-9929	Rodessa li, L. Cre.	F 281; 4/32" Gas/oil 6040/1	45.8	Ant; sub,cd, seis.	Major fld on prelim rating; 4 prospective pay zones between 9556-9961 ft. Bottom hole pres 6500 lbs. Well flwd 24 days prior ofcl test; gravity gas-oil ratio, pressure rose, but fluid vol constant. Low in octane rating, but rich bright stock material.
		EAST TEXAS—New Oil Pay									
Wood	Manziel	Amerada-Shell's Rosa Hague-Whatley 1, 680 ft wel, 2225 ft snl, Jno. Polk sur, 1600 ft ne 8455-8505-ft pumper.	5-18-44	8-31-44	8850	8754-8775	Pittsburgh (Basal Rodessa) sd, L. Cre.	F 85; ¼"	43	Flt. Ant; geol.	Small yield considered subnormal, altho established li pay at 8449-8506 ft not tested.
		NORTH TEXAS—New Oil Fields									
Montague	.....	Continental-Sinclair's J. M. Hundley 1, 330 ft fr nw & ne ls of e-194-ac of w-350 ac of s-776 ac of D. Martindale sur A-465, 1¾ mi n by e of Denver 2-well Bend pool.	3-12-44	7-31-44	8018	6228-6235	Bend cgl, Penn.	F 800; ½"	41	Ant; geol.	Thin pay zone for this depth, and about 100 feet lower structurally than nearby Denver pool. Tested small vol oil and water in 7700 ft Simpson.
Young	Farmer	Sohio's J. R. Garvey 1, 330 ft nsl and 990 ft wel TE&L Co. sec. 1856 adjacent to shallow and 3½ mi n by e of Garvey 2-well pool.	6-22-44	7-27-44	4485	4463-4485	Bend li, Penn.	F 805; ¾"	65	Ant; geol.	Normally such strikes in region embrace small area, so considered small pool until proved otherwise.
Young	.....	Kerlyn Oil Co-Phillips Co.'s W. H. Clarida 1, 300 ft. wel and 900 ft s of n/n/ul of W. A. Nicholson sur, A-1697, 1⅞ mi e by s Garvey 2-well Bend pool.	5- 2-44	7-17-44	5910	5263-5269½	Miss. li, Miss.	F 816; 122 wtr; 5/8"	42.5	Ant; geol.	Single well reserve 200,000-250,000 bbls, although perf. in only part of 18 ft lower pay, while 80 ft upper pay, which flwd on ds test, not tapped. Top Miss same subsea as disc. of 3-well Miss pool, 2 mi se that appears separate structure.
		NORTH TEXAS—New Oil Pays									
Cooke	Dangle	Paul B. Scott's A. D. Walterscheid 1, 5103 ft snl 5847 ft fr n/w/e ls E. Langford sur A-566, offsets Ellenburger wells at same level and higher.	6- 5-44	8-19-44	2610	2602-2610	Strawn sd, Penn.	P&F 248	40	Ant; geol.	This Strawn-pay strike is down dip on sharp structure, and prod will be erratic. Top Ellenburger pay varies 2173 to 2364 ft.
King	Bateman	Humble's Bateman 4, 4375 ft nsl 467 ft ewl sec. 101, blk A, J. B. Rector sur, offsets 3600-ft lime prod.	2-26-44	8- 5-44	6388 PB 5373	5325-5360	Strawn li, Penn.	P 121	35	Ant; geol.	Considering depth, not as attractive as upper pay, but may have greater area. Entered Miss at 5900 ft, Cambrian 6110, Hickory sd 6285, granite 6380.
		NORTH TEXAS—Oil Field Extensions									
Montague	Hildreth	C. H. Murdick's I. J. Walthall A-1, 2177 ft snl 330 ft wel Sam H. Smith sur A-662, 1¼ mi nw extension.	5- 9-44	7-29-44	6332 PB 6157	6114-6134	Bend cgl, Penn.	F 1008; 5/64"	41	Ant; geol.	Single well reserve 200,000-240,000 bbls. Entered Bend at same subsea as nearest producer, revealing structure flattens to nw.
Montague	Hildreth	C. H. Murdick's S. W. Heard 1, 1980 ft nsl 330 ft wel J. Castleberry sur. A-131.	6-13-44	8- 3-44	6323 PB 5987	5965-5987	Bend cgl, Penn.	F 447; 5/64"	41	Ant; geol.	1 mi nw extension.

Montague..	Hildreth.....	C. H. Murdick's S. W. Heard 1, 1980 ft nsl 330 ft wel J. Castleberry sur. A-131.	6-13-44	8- 3-44	6157 6323 PB 5987	5965-5987	Bend cgl, Penn.	F 447; 5/6"	41	Ant; geol.	1 mi nw extension.

WEST CENTRAL TEXAS—New Oil Field

Brown.....	.....	D. H. Brock's H. L. Craven 1, 660 ft snl and 1320 ft ewl subdiv. 7, Chas. Messer sur 127.	.....	7-28-44	855	845-855	Bend li, Penn.	P 2	27	Ant; geol.	1 mi se extension. Not important.

WEST CENTRAL TEXAS—New Oil Pays

Jones.....	Hawthorne...	Merry Bros & Perini-Alder Oil Co.'s 330 ft nsl and 720 ft ewl S. P. Ry. 19, blk. 2, 1½ mi e of 2533-48-ft pumper.	7- -44	8-26-44	2388	2384-2388	Flippen li, Penn.	P&F 388	38	Ant; geol.	Small but attractive fld, with 2 pays to reduce dry hole hazards.
Stephens..	Atkins.....	Sinclair's A. A. Atkins A-16, 635 ft nsl and 1980 ft ewl S. P. Ry. sec. 19, blk. 2, offsetting almost depleted 3200-ft Bend prod, 2½ mi se Brownville (Miss.) pool.	6-14-44	8-17-44	4305	4245-4290	Miss. li, Miss.	F 1345; ¾"	42.9	Ant; geol.	Will yield 8,000-12,000 bbls per ac. Gas tests 2 gal gasoline per 1,000 ft.

WEST TEXAS—New Oil Fields

Andrews...	.....	Phillips'-Sunray's University 1-H, c sw sw sec. 37, blk. 9, 2½ mi ne N. Cowden fld.	5- 8-44	8-10-44	4717	4605-4717	San Andres li, Perm.	P 121; 16 wtr.	30.8	Ant; geop.	Maybe major extension to N. Cowden fld; no failures between
Cochran...	Chipley.....	San Andres Prod. Co.'s M. B. Clouser 1, c ne¼ labor 18, league 62, Midland csl sur. 2½ mi nw semi-wildcat pumper.	4-29-44	8-19-44	4875	4860-4875	San Andres li, Perm.	P 187	30	Ant; geol.	Tentatively classed as new fld, but likely to be extension of NW. Slaughter.
Crane.....	Crossett.....	Texas Co.'s Chas. W. Hobbs-Shell A-1, c n½ of n¼ H&TC Ry. 46 blk. 35, 3¾ mi sw McCamey fld, 8½ mi w by s McCamey-Silurian 1-well area.	1-29-44	8- 3-44	6020	5300-5350 5365-5390	Devonian li, Devo.	F 435; 1"	45	Ant; geol.	State's 1st prodcr fr Devo. Single well reserve 240,000-280,000 bbls. Pay chalky li: 70% soluble, residue spongey.
Garza.....	.....	Honolulu Oil Corp-Devonian Oil's D. R. Dayton 1, c sw se T. T. Ry. Co. 1421, A347, 12½ mi nw Post fld.	5- 7-44	8-19-44	3768	3544-3565	San Andres li, Perm.	P 131; 30 wtr.	38.1	Ant; geol.	Important "step out" for area considered doubtful. Thin pay but oil gravity above par.
Pecos.....	Williams.....	Humble's O. W. Williams 1, c nw ne GC&SF Ry. sec. 3, blk. 114, 7½ mi nw Ft. Stockton; 5½ mi e Richards shallow pool.	4-23-44	8-22-44	3604	2840-2880	Yates sd, Perm.	F 22.32; ¼"	35.7	Ant; geop.	Substantial sweet gas zone overlies oil pay. More wells necessary to appraise importance of this sand strike.

WEST TEXAS—New Oil Pay and Extension

Andrews...	Fullerton.....	Mid-Continent's University 1, lse 7, c sw se sec. 20, blk. 13, 1½ mi se of fld proper.	1-18-44	8-22-44	8955	8460-8600	Silurian li, Sil	F 3,744; ¾"	40	Ant; geol, geop	Thick pay and flush yield sweet crude emphasize importance this 1½ mi se extension and new pay, which has shows oil but subnormal porosity and saturation in fld's regular 6800-7100-ft Clear Fork oil pay and within prod contour. Some call new pay Devo. Not expected to entirely underlie Clear Fork, which extends 11¾ mi nw-se, with max width 4 mi, incl Union or nw sector of structure.

WEST TEXAS—Oil Field Extensions

Andrews...	Pattillos.....	Texas Co.'s E. B. Jones 1, c nw nw PSL sec 21, blk. A-36, 1-4/5 mi n by w of isolated pumper.	3- 4-44	8-16-44	6242	4370-4488	San Andres-Grayburg li, Perm.	P 153; 35 wtr	33.2	Ant; geol.	Not important; area yields only small pumpers.
Andrews...	Fullerton.....	Frank and Geo. Frankel's University 1-D, near c nw se sec. 3, blk. 13, 1½ mi se prod.	4-26-44	7-30-44	6980	6840-6980	Wichita-Albany li, Perm.	F 1515	41.4	Ant; geol.	1½ mi se extension.
Cochran...	Dean.....	Falcon Co.'s C. S. Dean-Texaco 1, 660 ft out se c lge 94, Mills CSL sur.	5- 5-44	8-14-44	5035	4928-4945	San Andres li, Perm.	P 68; 28 wtr.	29.1	Ant; geol.	1½ mi ne extension; paves way for linking Dean, Slaughter, NW. Slaughter.

UPPER TEXAS GULF COAST—New Oil Pay

Ft. Bend...	S. Needville..	W. L. Goldston's E. C. Farmer 1, 330 fr swl 1400 fr nwl 250-ac lse, Rbt. Hodge sur.	4-21-44	8- 3-44	6706	6445-6449	Frio sd, Olig.	F 77; 4/32"	29.5	D. Flt; sub.	First real oil prod in area; may be new fld.

LOWER TEXAS GULF COAST—New Oil Fields

Bee.....	.....	Dirks Bros' D. E. Robinson A-1, 990 fr w&nl sec 6, 160-ac lse, sw¼ sec. 6, Ragley subdvn.	.....	7-20-44	3938	3925-3938	Pettus sd, Eoc.	Gas L; 38	....	.....	Unimportant—3 mi w Tuleta.
Brooks.....	Dan Sullivan .	Sun's Dan Sullivan 1, 8300 fr wl, 19,500 fr sl "El Tule" A. Garcia sur, on 14,732-ac lse.	3-21-44	8- 7-44	8522	8508-8517	Sand	F 147; 28/64"	35.4	.....	1-well reserve 150,000-200,000 bbls. 8 mi e Falfurrias.
Victoria....	SE. Telferner.	G. W. Strake's Tom O'Connor Jr 1, 1000 fr sel 1500 fr nel IRR sur 27 on 4000-ac lse.	4-10-44	8- -44	4537	2834-2838	Oligocene sd.	P 36	....	Sub.	Unimportant—3,000 ft sse Teleferner fld.

LOWER TEXAS GULF COAST—New Distillate Pay

Nueces....	Brayton.....	H. R. Smith-W. C. McBride's W. H. Rivers Est. 2, 835 fr sel 2173 fr swl sur 302, F. Z. Bishop subdvn, Brayton tr, Palo Alto gr.	6- 5-44	8-12-44	7880	6592-6638	Sand	F 20 per mln.	cond.	Normal dr.	Shallower sand, 2200 ft nw discovery well.

LOWER TEXAS GULF COAST—Distillate Field Extension

Karnes....	N. Pettus, Wilcox	Union Prod. Co.'s Guy Porter 2, on 1362-ac lse in Brooks and Burleson sur 25, 2800 nwly alg nel fr e cor th 400 ne at ra.	4-19-44	7- 2-44	7823	7060-7090	Wilcox sd, Eoc.	F 150	cond.	.....	Ne extension; adds perhaps 300 acres.

LOWER TEXAS GULF COAST—New Gas Fields

Bee.....	.....	Navarro Oil Co.'s E. J. Spielhangen 1, 467 fr nwl-swl 140-ac lse, J. Pace sur A-246 & 247, 2 mi nw Pettus.	6-26-44	8- -44	7432	7334-7338	Carrizo-Wilcox sd, Eoc.	F gas; ¼"	gas	.....	May be substantial gas reserve. Some oil in upper sand.
Cameron...	.....	Great Lakes Carbon Corp.'s Yturria Ld & Livestock Co. A-1, 747 fr nel 803 fr swl lot 25, Santa Isabel gr.	1-21-44	8-10-44	9473	5980-5983	Sand, Miocene.	F 6 mln	gas	Ant; seis.	Relatively unimportant. 5 mi sw Pt. Isabel.

SOUTHWEST TEXAS—New Gas Field

Starr.....	.....	T. E. Stephens' M. Hinojosa 4, 1840 snl 4767-ac. lse at pt on nl 5200 w of intersec of nl and common line betw porc. 110 & 111, 8600 ne interior cor of sw side lse.	5-18-44	8- 9-44	2096	2040-2062 2063-2068	Oligocene sd.	F; 1/16"	gas	.....	Relatively unimportant gas area.

SOUTH CENTRAL TEXAS—New Oil Field

Atascosa...	Charlotte.....	Humble's E. J. Pruitt 3, 2740 nw of sel of 200-ac lse 1000 se at ra fr nel Antonio Estrada sur A-224.	.....	8- 9-44	6923	6917-6923	Edwards li, Cre.	F 176; 5 wtr.	37.7	Ant; seis, geop.	Single well reserve 200,000-220,000 bbls. Opens new region to Edwards production.

WEST VIRGINIA—New Gas Fields

Logan.....	.....	Columbian Carbon Co.'s Island Creek Coal Co 1.....	.....	8- -44	2037	1895-2037	Big lime	F	gas	.....	Second test in area, 3 mi ne No. 1.
Logan.....	.....	Columbian Carbon Co.'s Island Creek Coal Co. 2, 3 mi n and e of No. 1, listed above.....	.....	8- -44	4022	3260-3560	Corniferous li.	F 0.2 mln.	gas	.....	3 mi ne extension and new pay.

WYOMING—New Oil Pay

Natrona...	Spindletop....	Wyalta Oil Co.'s Government 1-D, se se sw 32-30n-81w.....	.....	8-20-44	2445	2250-2268	Tensleep sd, Penn.	S 320	16	.....	Well est good for 600 bbls. on pump. Opened in 1922, fld heretofore produced through 4 wells fr 75 ac in Sundance (Jurassic) at 1100 ft.

[1] Character of producing formations abbreviated thus: ch, chalk; dolo, dolomite; li, limestone; sd, sandstone; sh, shale, ser, serpentine; cgl, conglomerate. Ages of formations abbreviated thus: Pleis, Pleistocene; Mio, Miocene, Olig, Oligocene; Eoc, Eocene; U. Cre, Upper Cretaceous; L. Cre, Lower Cretaceous; Jur, Jurassic; Tri, Triassic; Perm, Permian; Penn, Pennsylvanian; U. Miss, Upper Mississippian; L. Miss, Lower Mississippian; Devo, Devonian; Sil, Silurian; Ord, Ordovician; Cam, Cambrian.

[2] Barrels of oil per day (24 hr rate), flowing (F), pumping (P), swabbing (Sw), or bailing (B); or million cubic feet of gas daily open flow capacity; size of choke given in inches.

[3] Type structure abbreviated as follows: Ant, Anticline; D, Dome; Fld, Fold or Folded; Flt, Fault or Faulted; M, Monocline; N, Nose; SD, Salt Dome; Str trp, Stratigraphic trap; Syn, Syncline; Ter, Terrace.

[4] Method of discovery abbreviated as follows: cd, core drilling; dr, drilling; geol, geology; geop, geophysics; grv, gravity meter; ran dr, random drilling; seis, seismograph; sub, subsurface geology; sur, surface geology.

August Exploratory Record

■ CONTINUED FROM PAGE 52

Texas the Fullerton field, Andrews County, was given a 1½-mile extension and a new, deeper pay through completion of an important outpost; and the Dean field, Cochran County, was extended nearly two miles by a well which may link the field with the Slaughter area.

Among the more important strikes in Kansas in August was a gas area in Barber County which promises to cover several sections, although several oil pools were opened.

New oil fields in Clay and Richland counties were among the more promising of a dozen discoveries and extensions in Illinois.

Michigan's several successful wildcat completions included a well which extended considerably the Fork field, Mecosta County.

California gained little in oil reserves, but a gas discovery in Solano County appeared very important, and a rich new zone in the Rio Vista field, same county, is expected to add much to gas reserves.

Statistics on Exploration

Through August of this year, weekly average completions of exploratory wells were 20.9 percent higher than in the first eight months of last year—81 per week against 67 weekly last year. This increase is fairly close to but not equal to the 25.9 percent increase shown for all completions. (THE OIL WEEKLY, September 18, 1944, page 29.) However, there has been a little better proportion of successful completions this year: 18.5 percent against 17.9 percent last year. Therefore, discoveries are up from last year in about the same percentage as total completions.

There has been greater success this year than last year in discoveries and extensions of all categories, at least from the standpoint of number of strikes. However, stepping up of oil discoveries has been relatively lower than increases in gas and distillate payoffs. Apparently, many wells seeking oil have found only distillate or gas. This perhaps reflects deeper drilling.

So far this year, oil discoveries have been only 14.4 percent above those of the corresponding period last year, a smaller increase than that shown for exploratory well completions. Finding of new oil fields is up 18 percent, but discoveries of new oil pay zones are up only seven percent, while reported extensions of oil fields have run only two percent above last year. Apparently, it becomes increasingly difficult to prove new oil reserves by drilling in and around established fields and increasingly necessary to search for entirely new fields.

Water Flooding

■ CONTINUED FROM PAGE 50

trol is required, limestone beds or lime being used for alkilinity or Ph increase.

Organic growth are algae which have rapid growth and when carried to sand result in plugging action. Removal of growth is usually accomplished by dosing water with chlorine or copper sulfate. Chlorine must be used under strict supervision and the latter is usually used.

Iron is removed by aeration, exidization and filtration. This procedure also liberates carbon dioxide and hydrogen sulphide gases.

Suspended matter is removed by use of alum as a coagulent followed by filtration. Ph values of 5.8 to 6.8 permit better floc formation, the value varying with water composition. Insoluble impurities are also removed by this action.

Corrosive gases are removed by aeration.

Manganese exerts same effect as iron, both forming insoluable precipitates. If present in excessive amounts it should be removed by oxidation-filtration or base exchange through zeolites.

Usual treatment of flood water may consist of aeration, addition of limestone beds or lime and alum or anhydrous ferric chloride as coagulants and for Ph control, chlorine or copper sulfate dosage for algae, and filtration. It is advisable to have flood water analysed by a testing laboratory and their treatment recommendations observed in design of treatment plant. Treating equipment should be of size and capacity necessary to meet flood capacity requirements.

Following determination of water supply of sufficient quantity and quality to meet development requirements a development or well-spacing pattern should be selected.

An input to producer pattern should be selected which gives the most efficient and economical recovery project. Patterns which have been used are circle, line, 4-spot, 5-spot, 7-spot and 9-spot. These patterns are illustrated in Figure 1. The 5-spot is most commonly used today, and seems to offer in most cases the most economical proposition.

Factors which influence selection of pattern are shape and size of lease, sand permeability, sand thickness, and oil content. Short spacing results in more rapid flood and shorter project life and was used rather extensively in earlier projects. Now however the trend is toward wider spacing because of economics involved. Spacing between like wells varies from 200 to 600 feet. No definite statement may be made regarding pattern which should be selected for any particular project pending investigation.

So many factors affect pattern selection that estimated data concerning all phases of the project should be balanced, one pattern against another and the one selected which best suits the particular purpose.

In conjunction with pattern selection method of operation should be decided upon, whether to flow or pump production and whether to inject water as input wells are drilled or employ delayed drilling and complete producing wells following a period of injection necessary to fill vacant pore space with water. Essentially delayed drilling is the practice of flooding the sand from input wells before producing wells are drilled, the reason being that more of the sand volume is flooded, both the tight and loose sections being flooded, and more oil recovered. The effectiveness of this practice may depend upon a comparative lack of vertical permeability.

Production is usually flowed in delayed drilling, the sand pressure being built up until sufficiently high for flowing needs. Advocates of flow production insist higher recovery is obtained because of higher pressure used, besides elimination of material and pumping expense. Other operators insist greater recovery is to be obtained by pumping, their argument being that more oil is recovered if wells are kept pumped down to the top of the sand and no back pressure exerted, as would be the case of flowing production. There appears to be no definite guide for determination of industry wide advice since the relative values of the two methods are definitely debatable.

Selecting Surface Equipment

Selection of surface equipment should of course be based on estimated flood requirements. From theoretical calculations, or possibly pilot plant operation, and analysis of water, installation of proper treating equipment and the plant itself are relatively simple. Future expansion should be kept in mind during initial construction stage.

A typical plant installation might include a raw water tank, filtered-water tank, filters, filter pumps, gas engines, triplex pump and air compressor. Surface installation might be use of long-stroke, high capacity pumping jacks, new power, water separator, pressure lines from plant to input lines, ditching, oil stripping reservoir, input well head connections (consisting of necessary valves, check valve, strainers and meter) and possibly cement-lined or protective-lined pipe for raw water if corrosive before treatment. In addition will be construction of water well or other source of gathering water and setting of boxes filled with hay or some other material to prevent freezing in input well heads. Include other items pertinent to your particular case, add cost of completing input and producing wells and you have initial construction cost. Development costs per acre average from $2500 to $3500 per acre at present flood project depths. Type of water available, sand depth and characteristics are the main factors controlling installation costs.

No Depth Restriction

There is, so far as is known, no physical restriction of depths to which water flooding may be carried out successfully. It depends upon sand characteristics and fluid saturation. However, as is the case in all forms of secondary recovery, the real problem is economics. By using tools available to all engineers, sufficiently accurate predictions may be made regarding the project future to evaluate any proposed water-flood project.

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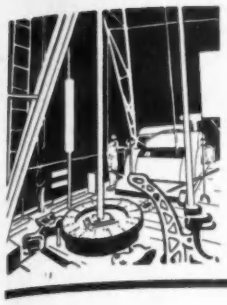
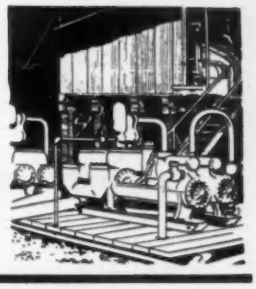
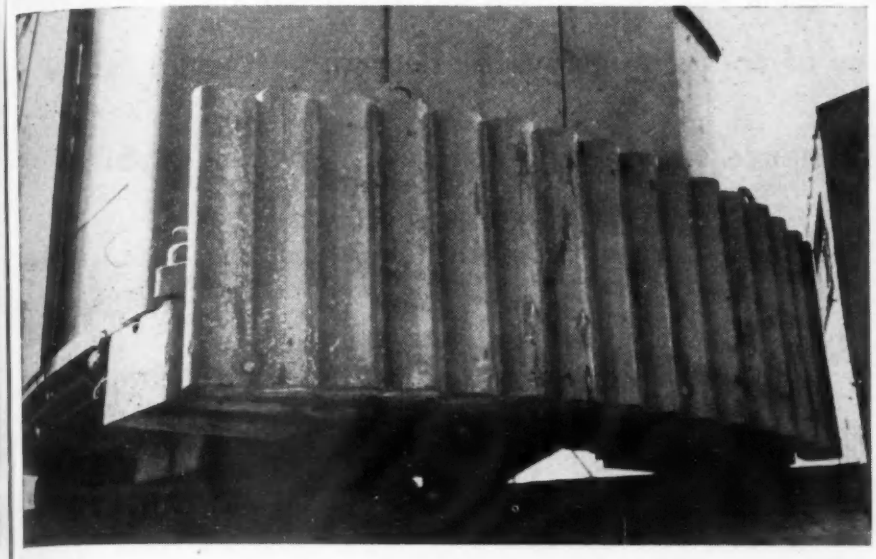


OPERATING HINTS *For Drilling Crews*



Crane Counterweights Speed Equipment Shift



Salvaged drill pipe, cut to uniform length and welded to fit around crane cab, forms a portable weighting unit which greatly increases capacity of lifting unit without outside guying.

EQUIPMENT HANDLING

Because of extra heavy loads imposed upon the truck-mounted crane when rigs are torn down or reassembled, one company built up a counterweight which may easily be slipped over the rear of the unit, and which permits a much wider range of weights than may be handled with the single crane.

Salvaged, 6-inch drill stem material was cut up into 30-inch sections, placed side-by-side in a vertical position and welded together, the row curving slightly to conform to the curvature of the housing at the rear of the hoisting unit. A flat steel band welded to the back side of the row of sections was provided with hook ends that loop over the normal cast-iron counterweight at the bottom of the housing. Three heavy bolts extending through the auxiliary weight at equidistant intervals along the bottom of the row further secure and steady the mass of the unit. Two lift-eyes welded to the upper part of the row of weights simplify handling, and it is a simple matter for another small crane or highline from the derrick to hoist the assembly and attach it to the crane.

Considerably increasing the range of weights that may be lifted, this counterweight has many times repaid its initial cost of installation. Its value is especially evident when modern heavy boilers are hoisted as a single unit and deposited on a truck bed. Drawworks and similar extra-heavy units about the deep drilling rigs on which it operates, are handled easily and in minimum time.

Boiler Battery Piping Aided by Flexible Units

BOILER FITTINGS

In a move to streamline rigging-up operations in boiler settings, one company devised a system that requires a minimum of piping, yet any number of boilers may be quickly added or taken away without disturbing existing or remaining units. Fuel, water and blow-off lines all extend laterally along the base of the units, located just beneath or slightly behind the fire-box base and connected between the units by a special shop-assembled fitting, including a short length of heavy composition hose. As shown in the typical between-boilers hook-up, the lines terminate beside and are welded to the longitudinal base of the boiler, a flange connection being provided so as to permit joining of the two units with a matching flange and nipple arrangement that may be easily slipped in place and bolted together. The flexible hose slips over smooth-end nipples screwed into each of the opposing flange-halves, and is securely clamped and leak-proofed by heavy steel clamps which provide nearly 360-degree contact with the hose material.

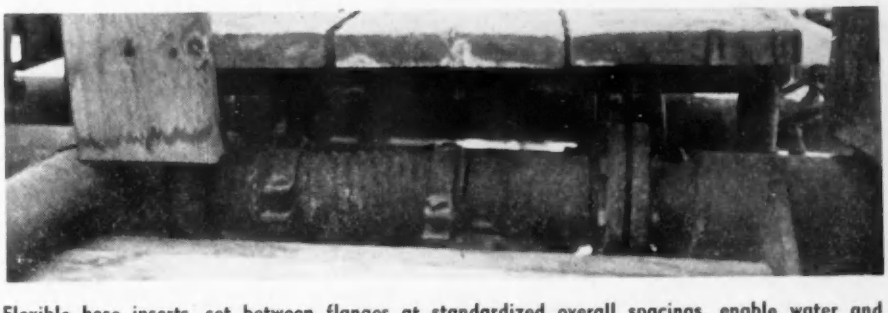
In addition to facilitating the insertion of the joining section when the boilers are spotted, the flexible hose allows perfect connection between the units even though the latter may not be set on exactly the same level.

Roller Support Platform Simplifies Line Handling

WIRE LINE HANDLING

To facilitate the handling of wire rope reels when cutting short lengths of wire line, one company has designed and put into use a home made roller bearing platform which will accommodate any size rope from ⅛-inch to 1½-inch. Constructed entirely of salvaged materials, the only expense encountered was for labor and a small amount of welding supplies. In two sections, a reeling platform and a ramp for loading, the entire unit is portable and easily moved from one location to another.

Two rollers hold the wire rope reel for rotation. These are made of lengths of 4-inch used pipe with a piece of steel plate welded to each end as a flange, to the center of each flange is welded an axle that fits into old roller bearings as shown in the photograph. The roller bearings are placed in grooves cut into the 4x4-inch side pieces of the wooden frame. The wooden frame around the rollers is constructed of 4x4 and 2x8-inch oak timbers, salvaged from bracing in carload lot material, and held together with old bolts and steel rods salvaged



Flexible hose inserts, set between flanges at standardized overall spacings, enable water and steam lines to be tied in despite slight inequalities in boiler unit alignment or levelling.

The utility of any equipment depends in a large measure on the "service available when and where it is in use". From a single field assembly bolt to a complete derrick, drilling mast, or pumping unit you can get just whatever you need from Lee C. Moore's conveniently located stores.

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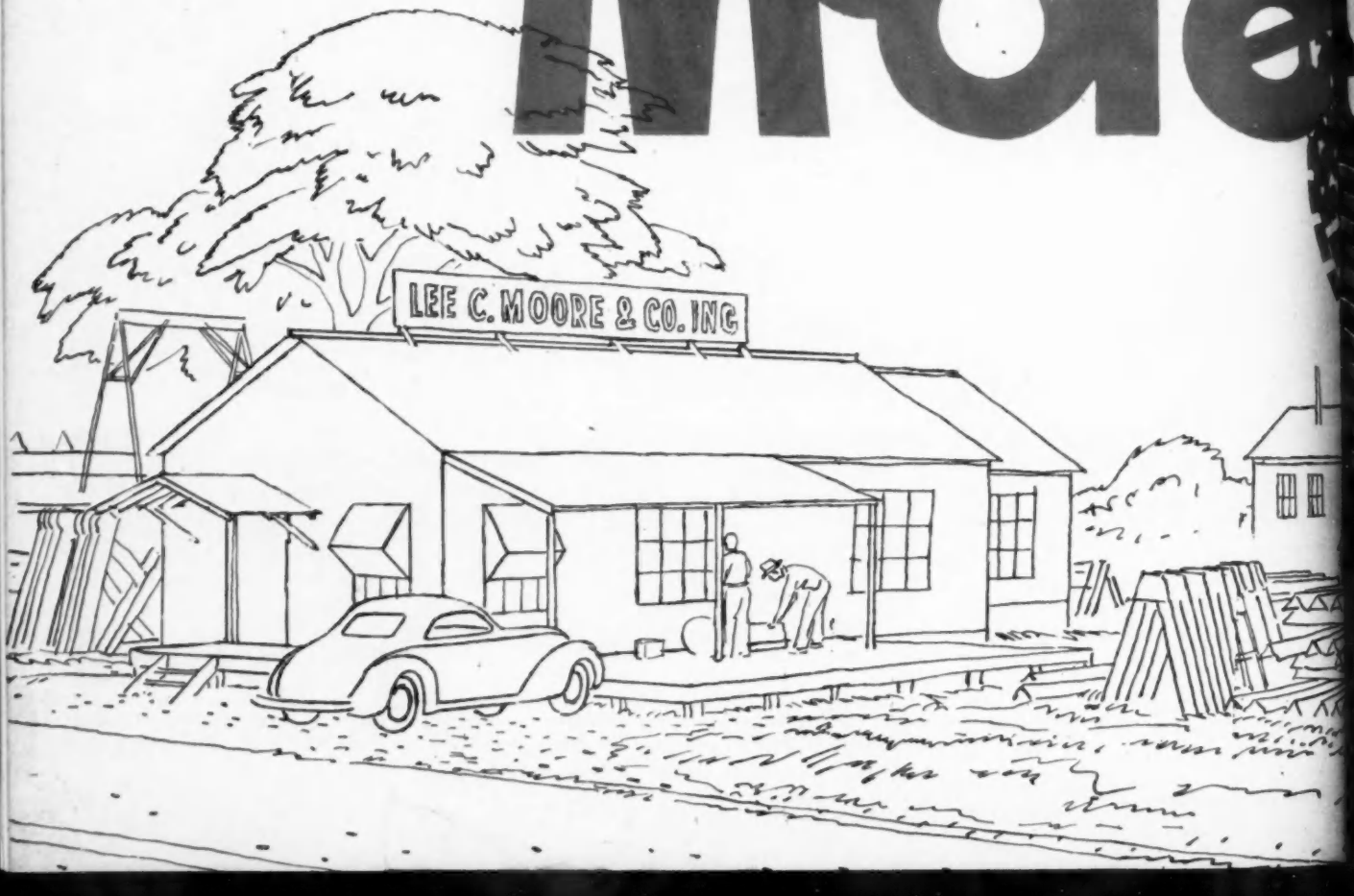

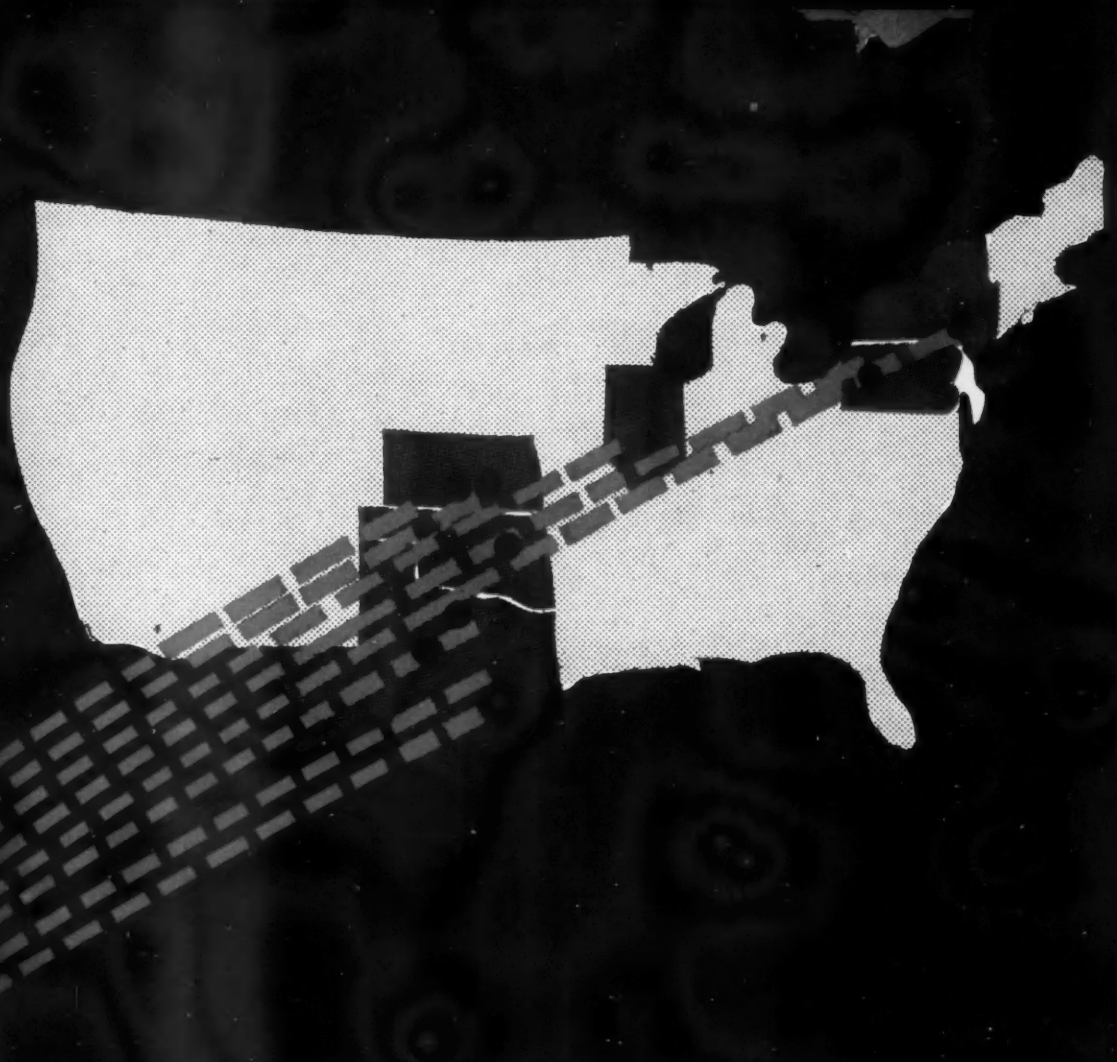

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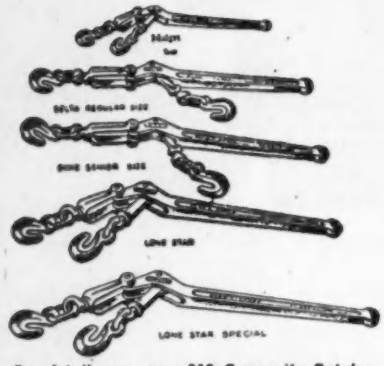
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Pipe rollers, supported on anti-friction bearings, carry reel and permit line measuring.

from the junk pile. The length of the rollers depends entirely upon the largest size rope to be handled. This also governs the spacing of the rollers center to center. If no large rope is to be handled the length of the rollers can be shortened considerably. The ramp is also constructed of salvaged oak timbers.

Protection Extends Life Of Generator Circuits

Wire leads from the portable generator set to the rig lighting circuit are ingeniously protected by one contractor who found the usual overhead tie-in in danger of breakage, with resulting hazard to men on the rig.

LIGHTING EQUIPMENT

The control panel, mounted at the front of the four-wheel trailer carrying the unit, is equipped so that the leads project downward, where pairs of flexible metallic conduit are tied in to 90° boxes rigidly mounted on the trailer front axle. Pairs of flexible leads then carry the wiring out along the trailer tongue to connection with the rig wiring.

This type of mounting enables a watertight cover to be slipped on over the control panel, and assures protection against water running along the wires and entering the panel, to cause possible short-circuits or other electrical breakdown.

The flexible conduit on both sides of the rigidly mounted ells on the axle provides ample adjustment for any shifts in alignment of the unit while on the move and protects the cables within from dirt or road damage.

Brazing, welding or otherwise electrically bonding the conduit ells to the axle of the trailer insures a return circuit in case insulation is chafed from one of the wires carried within the metallic tube, and thus safeguards against accidental shock.

$5.00 is paid for each illustrated acceptable contribution. Mail to The Editor, THE OIL WEEKLY, P. O. Box 2608, Houston 1, Texas

Tank Fixtures Support Scouring Jet Manifold

Yielding a better mixed and more consistently uniform mud, the method devised by one company to make this phase of their drilling activity more efficient is both inexpensive and easy to operate. Atop their portable steel mud tanks were mounted high pressure pipe cross-arms hooked directly into the high-pressure end of the mud pumps. Leading downward from the center high-pressure fitting of each arm was installed a short line equipped with fluid-tight swivel near its top and perforations near the bottom. Welded to this line some distance above the fluid level in the tank were light-pipe handles by which the line can be turned by the pump man from either side of the tank.

MUD-MIXING DEVICE

Injecting high-pressure mud into the

Use of metallic conduit, leading to ells fixed over axle and thence to terminal posts at the end of the trailer tongue, afford maximum cover to wiring and eliminate cause of many lighting shorts.

Specify REED ROCK BITS

Speed WITH LESS WEIGHT

The Reed Rock Bit cross roller principle of design gives a chipping, tearing action of the cutter teeth on the formation for faster cutting speeds with lighter drilling weights.

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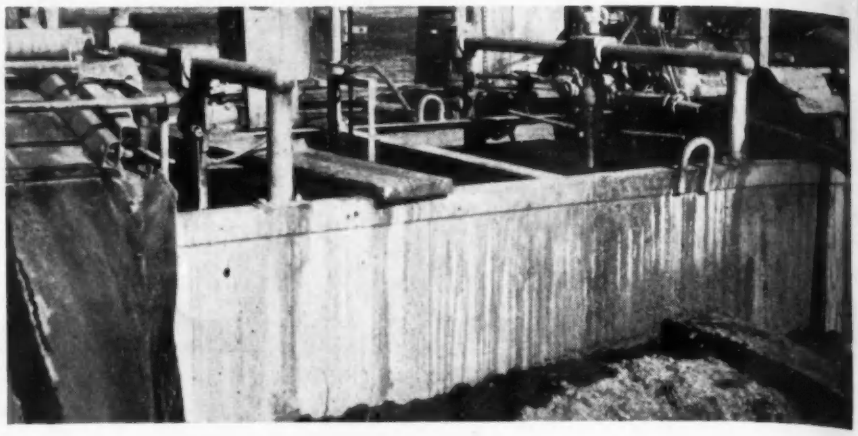
BE SURE TO CHECK . . . .

Trading Post Section

ON PAGE 83 OF THIS ISSUE

Because of the scarcity of certain types of new equipment and the fact that some operators may have a surplus of some items and a serious shortage of others, this **Used Equipment Forum** is performing a valuable service to operators in locating needed used materials or disposing of surpluses that may be needed by others.



Tied in to the mud lines, and with jets at the base of the arm projecting within the mud bath, these rocking units enable the stirring of settlings and maintenance of uniform mud consistency and weight.

tanks from time to time thoroughly stirs up the mixture from the bottom of the tank up. It is especially beneficial when chemicals or weight-adding materials are mixed with the fluid and which must be kept uniformly distributed through the column when drilling through critical zones. Installation of the assembly is simple, requiring only a two-foot pipe support that is bolted to the rim of the tank, and which may be disassembled in a matter of minutes.

A-Frame Members Form Ladderway to Derrick

Speed in climbing a derrick usually means added safety to the crewman making the ascent, as has been proven by the experience of one contractor using a portable derrick of the A-frame type. Instead of the usual vertical ladder along one of the sides of the A-frame, his rigs are equipped with an addition to the brace members which gives a sloping climb to the point of contact with the hinged section.

RIGGING-UP SAFETY

The ladder is formed by welding short sections of salvaged 1-inch pipe across the outer edges of the diverging angles forming the back of the support member, the steps being spaced about a foot apart to give ample clearance between. The step sections are cut to length and the ends then flattened before welding in place, both to give a wider bearing at the support and to remove the sharp ends of pipe which, if left, might cause injury as the crewman ran up the ladder, steadying himself by running his hands along the angles.

Both back legs of the support are equipped with ladders, so as to give quick access to the upper portion of the derrick from either side of the drawworks.

Welded across the outer surface of the angle braces, these steps simplify access to derrick legs

CHAINS THAT LAST!

You can count on Jeffrey Devil Dog oil well chains. Jeffrey is proud of its 65 years experience in chain building. A chain for every drilling service.

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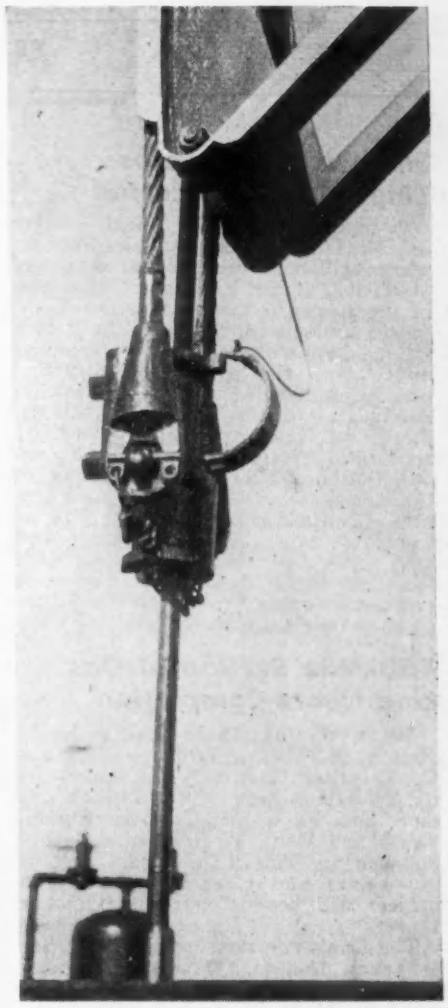
Novel Cut-off Prevents Pumping Unit Damage

Ingenious device in which a clever magneto shorting circuit applies is refinement of the usual weight or rider plan for forestalling a common difficulty

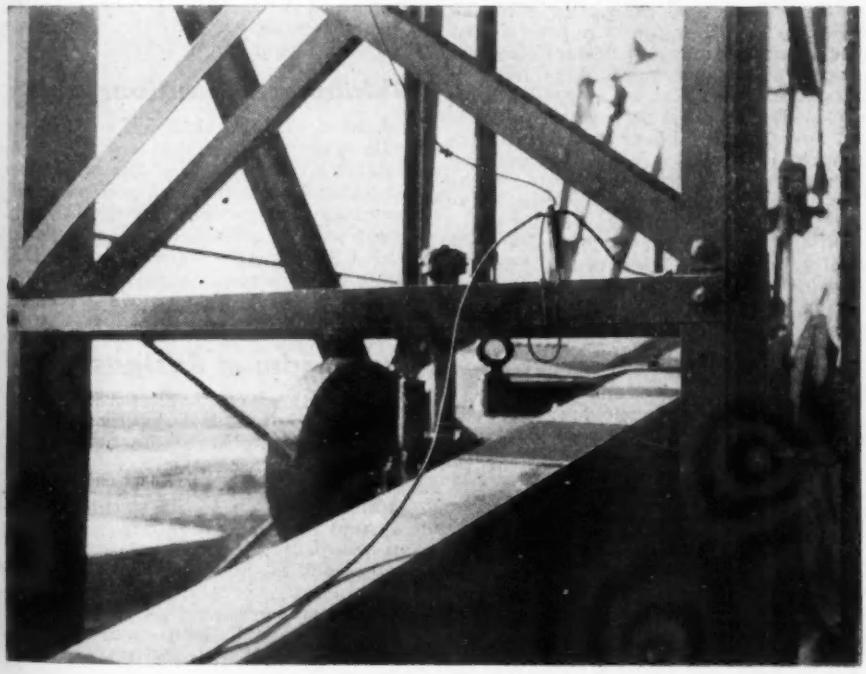
ONE of the most serious, and unfortunately, most common sources of damage to a pumping unit is that caused by the sudden pumping-off of the well while the unit is still travelling at high speed. Or in the instance of the rods breaking, the then unbalanced unit starts to gallop unevenly, resulting in buckling of the walking beam or horsehead, throwing of the counterweights, or doing other serious damage to the unit, its base, or the well head itself. Various and novel devices are used by operators who attempt to develop some form of shut-off switch which will automatically stop the unit. Most of them have one feature in common, that of a weight carefully balanced on the horsehead reins in such a manner that should the unit gallop or start to deviate from the normally smooth harmonic motion, the weight will topple over and pull a string which in turn will cut off the engine switch.

A novel method of effecting this type of cut-off was developed by the superintendent of one company. It is nearly fool-proof, does not consume any scarce materials, and may be built by any field man in the matter of only a few hours. The weight balanced on the reins is of the simplest type, yet is positive acting. A narrow half-circle band of steel some two inches wide cut from the end of a piece of 6-inch casing was prepared in the manner shown in the photograph. Set up in a vertical position, the lower end of the arc is slotted to permit its resting on the rod hanger while at the same time straddling the polished rod. This feature prevents side play and possible slipping off during normal vibration of the unit. The upper end of the weight is narrowed down to approximately ¼-inch in width and the extreme end bent downward to form a small hook which may be hooked over the top of a small section of ½-inch pipe welded to the body of the rod hanger.

The switch cut-off part of the system is unique in its simplicity and positiveness of action. A well-insulated wire attached to the grounding-out button on the engine magneto is brought over to any convenient cross member of the pumping unit framework and there attached to a previously prepared spring type clothes pin, the latter being firmly lashed to the framework. A small hole was drilled through the nose of both halves of the clothespin and copper contact points inserted in them in such a way that when the clothespin is closed in its normal position, the points will make contact. With the cable from the magneto soldered to the outside end of one of these contacts, and a similar wire, which may be grounded to the nearby frame unit, soldered to the other contact, the clothespin in its normal position would short out the engine magneto, shutting down the unit. However, to prevent this condition except at such time when the unit should be shut down, a small leaf of bakelite is placed between the contact points. The pressure of the two jaws will hold the tab firmly in place. A strong cord with one end attached to this tab is run over and attached to the weight situated on the horsehead assembly.



Hook-up at polish-rod clamp, showing the method of supporting vibration-actuated weight unit and means of supporting on clamp body between socketed cable connections to horsehead. The trip line disappears upward.



The spring-actuated clothespin, equipped with a pair of contact points in the jaws, is kept from completing the grounding circuit by bakelite insulator leaf, which is jerked free from pin grip when rider or weight is released by irregular action of pumping unit.

Engine Shorts Out

Should the unit for any reason become unbalanced, the weight will be thrown out of its socket, and being in a state of unbalance when not suspended in its small holder, it will fall, jerking the insulating tab from between the clothespin halves and causing the engine to be shorted out.

The dependability, ease of installation, and inexpensive features of this device are several of the advantages to be gained in building one for each well where trouble of this sort may develop.

PIPE LINE REVIEW

Elk Hills-Los Angeles Line to Be Constructed

A pipe line from the Naval Reserve in Elk Hills to Los Angeles refining plants will be constructed at a cost of $1,911,462, Louis M. Dreves, chairman of the Area Production Urgency Committee, announced. Work will be started immediately with 3 major oil companies undertaking the project. Construction was recommended by the Petroleum Administration for War and it will tap the Naval Reserve recently opened by act of Congress. Involved in the construction are Union Oil Company of California, General Petroleum Corporation of California, and The Texas Company, whose lines will be linked with wells drilled by the Standard Oil Company of California. Preferred manpower rating has been given the job to rush completion, Dreves said.

450-Mile Section of Gas Line Nears Completion

With the exception of a 3-mile stretch in Texas, Williams Brothers Construction Company has completed its 450-mile section of the 24-inch gas pipe line between Corpus Christi, Texas and West Virginia, officials announced in Tulsa. Crews are installing valves and cleaning up and the project will be completed by October 1.

The firm's contract includes stretches in Texas, Louisiana, Arkansas, Mississippi and Tennessee. A 64-mile link between Monroe and Clear Lake, Louisiana, including a crossing of the Ouachita River, will be completed between October 1 and 5, according to officials of Midwestern Engineers, Tulsa, contractors. Completion is expected at the same time on a 4-mile stretch between the Darbonne Bayou and the Ouachita River.

The 1265-mile line is to be in operation by October 15. Contractors report most of the river crossings completed and 1027 miles of pipe had been welded by September 15. The line will transport 287,000,000 cubic feet of gas daily at capacity load and when completed will have cost $54,000,000.

Report Urges No Increase In Transportation Taxes

Elimination of taxes on transportation, including the levy on lubricating oil, the tax on oil transportation by pipe line and the manufacturers' sales tax on automotive vehicles, parts and accessories, was recommended to Congress last week as an aid to the reconversion of transportation following the war in the final report of the board of investigation and research.

As it closed its doors on September 18 after three years of studies of railroad problems, the board suggested that the federal tax on gasoline be identified as a user tax, its proceeds to be expended on highways and airways; that state taxes on motor fuel and on carriers and transportation facilities, except general taxes and taxes for administrative and regulatory purposes, be identified as user taxes to be expended on the public facilities provided for transportation use, and that Congress clarify the tax implications of the commerce clause with respect to taxation of interstate and intrastate carriers.

The staff report on which the recommendations were based held that, in 1940, the railroads, pipe lines and intercity bus lines were relatively more heavily taxed than the intercity truck lines, air lines and water carriers.

A separate statement was filed by C. E. Childs of Nebraska, who, with Chairman Robert E. Webb of Kentucky, constituted the board, in which he concluded, upon the evidence of the report, that "the taxes of railroads, air lines and water lines are relatively low, and those of busses, trucks and pipe lines are relatively high.

Childs also expressed the view that "any moves in the direction of equalization of carrier tax burdens should be toward reductions of highly taxed highway and pipe-line carriers, rather than increasing the tax burden of the relatively low-taxed rail, water and air carriers." It may be expected, he said, that the levels of all taxes will be relatively high for some years to come, but that there will be downward revisions from present war levels and, he asserted, "it would seem unwise at this time to consider increasing the tax burdens of any form of transportation."

FPC Schedules Hearings In Kansas City and Denver

The Federal Power Commission has scheduled a hearing for October 18 at Kansas City, Missouri, on the application of Cities Service Gas Company for authority to construct 52 miles of 16-inch gas pipe line from the Burbank Field to Washington County, Oklahoma, and 6.4 miles of 16-inch line between its Altoona and Vilas lines in Wilson County, Kansas, together with a closed engine jacket water system and two dust scrubbers at its Grabham compressing station in Montgomery County, Kansas, and two dust scrubbers at its Petrolia compressing station in Allen County, Kansas.

On October 23, the Commission will hold a hearing in Denver on the application of the Canadian River Gas Company for authority to add a 600-horsepower compressor unit and a 125-kva electric generator and other necessary equipment at its Dalhart compressor station near Dalhart, Texas.

A hearing will be held in Denver October 24 on the application of Kansas-Colorado Utilities, Inc., to acquire and operate all the natural gas facilities of The Central Gas Utilities Company, in Baca and Prowers Counties, Colorado, and Stevens, Stanton, Hamilton and Grant Counties, Kansas.

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WAYNE MOORE, geologist for Stanolind Oil & Gas Company in the Panhandle and until recently on the company's West Texas staff, has resigned to engage in consulting practice at Midland, Texas.

41-Mile Oklahoma-Kansas Pipe Line Link Complete

Oil is being run through the 41-mile, 16-inch loop laid for Stanolind Pipe Line Company between Drumright, Oklahoma and Sycamore, Kansas. The line was an emergency project designed to balance supply for the company's main line between Texas and Chicago. Contractors were C. S. Foreman and Jones & Brooks.

17-Mile Line Completed Near Liberal, Kansas

Midwestern Engineers, Tulsa contractors, announced completion of 17 miles of 22-inch gas line from the Liberal, Kansas station to Panhandle Eastern Pipe Line Company's main line leading from the Hugoton pool.

A 14-mile loop near Hansfield is also nearing completion.

Del Valle Field Map Is Prepared by Survey

Preliminary results of studies of subsurface conditions in the Del Valle oil field in Los Angeles County, California, are incorporated in a map of the areal geology of the district, a structure-contour map indicating the subsurface configuration of the upper Miocene Videgain zone, the principal source of oil and gas production in the field, and three cross sections interpreting the complex stratigraphic and structural conditions involved, just prepared by the Geological Survey.

The maps have not been printed for distribution, but for immediate use in planning further exploration and development in the area they may be consulted in the office of the conservation branch of the Geological Survey in the Post Office and Court House building in Los Angeles.

Oklahoma Abandonments

A total of 115 exhausted oil and gas wells were plugged and abandoned in Oklahoma between July 21 and August 21, according to the oil and gas conservation department of the Oklahoma Corporation Commission. The wells included 74 in the Nowata area owned by Phillips Petroleum Company. For the period 19 dry holes also were plugged and abandoned.

Sun Landman Resigns

G. C. Francisco, Jr. has resigned as district landman for Sun Oil Company in Houston, a position he held for 14 years, and has been succeeded by E. Porter Johnson.

Johnson has been in charge of the title and division order departments in the company's Beaumont division office. Gerard H. Stafford has been named assistant district landman. Scouting duties formerly handled by Stafford are in charge of R. O. Jensen.

Francisco will operate independently in assembling drilling blocks and dealing in leases and royalties. He will maintain an office in the Esperson Building, Houston.

Inventories of Fuel Oils Increased as Industry Maintains Active Operations

Inventories of refined oils reacted favorably to operations of the industry as carried on in the week ended September 16. Stocks of both light fuel oils and residual fuel oil were increased in comparatively large amount, and although gasoline stocks were reduced, the withdrawal was of seasonal nature. These results occurred with refinery runs of crude practically the same as in the previous week, but with production of distillate fuel oil and gasoline increased and output of residual lower. Meanwhile, crude oil production was up to a new peak and the need for drawing on crude storage was somewhat eased.

However, in the preceding week, ended September 9, there had been a heavy draft on crude stocks, in the amount of 2,859,000 barrels, an average of 408,000 barrels daily. That withdrawal left stocks of refinable crude in the United States at only 220,623,000 barrels, lowest since 1921. The large draft on crude stocks reflected reductions of 888,000 barrels of Illinois-Indiana grade, 114,000 of Kansas grade, 515,000 of Oklahoma grade, a net decrease of 660,000 for Texas, 194,000 for California, 244,000 for Rocky Mountain grades. These large reductions in amounts of crude storage reported appeared to be explained in more than normal degree by transfers of crude to stocks of distillate and residual fuel oil.

In averaging 4,745,000 barrels daily in the week of September 16, United States crude production set a new record and was 56,000 barrels a day higher than in the previous week and 370,000 barrels or 8.5 percent higher than in the comparable week last year. Crude runs to stills meanwhile were up 1000 barrels to 4,585,000 daily, and that volume was 363,000 daily or 8.6 percent above the 4,222,000 daily reported for the like week last year. At the level of 220,623,000 barrels on September 9, crude stocks were 13,766,000 barrels or 5.9 percent less than the 234,389,000 barrels reported for the corresponding date last year.

Gasoline production at refineries, including natural blended, totaled 14,201,000 barrels in the week of September 16, an average of 2,029,000 daily. This was 15,000 a day more than in the previous week and 209,000 daily or 11.5 percent more than production in the corresponding week last year. Stocks of finished and unfinished gasoline were reduced at the rate of 120,000 barrels daily, having declined to 78,726,000 barrels, but that amount was 8,396,000 barrels or 11.9 percent more than the 70,330,000 barrels reported for September 18 last year.

Gas oil and distillate fuel oil production totaled 4,470,000 barrels or 639,000 daily in the September 16 week, and was 4000 a day higher than in the previous week and 26,000 daily or 4.3 percent higher than in the like week last year. Stocks were increased at the rate of 215,000 barrels daily and rose to 43,556,000 barrels, an amount 4,558,000 barrels or 11.7 percent higher than the 38,998,000 barrels reported a year previously.

Residual fuel oil production of 8,214,000 barrels was an average of 1,173,000 daily. It was 112,000 a day lower than in the previous week and 50,000 daily or 4.1 percent lower than output in the like week last year. Stocks were increased, however, at the rate of 215,000 barrels daily, having risen to 62,240,000 barrels. That amount was within 4,635,000 barrels or 6.9 percent of the 66,875,000 barrels reported for September 18 last year.

Trends of Operations and Changes in Stocks

Figures on crude stocks are from Bureau of Mines weekly reports; all others from American Petroleum Institute weekly reports, which are estimates on Bureau of Mines basis.

(All figures in thousands of barrels—add 000)

HIGHS AND LOWS OF RECENT YEARS

ITEM	Crude Oil Prod. Barrels Daily	Crude Oil Prod. Week Ended	Runs to Stills Barrels Daily	Runs to Stills Week Ended	Crude Stocks Barrels	Crude Stocks Week Ended	Gasoline Stocks Barrels	Gasoline Stocks Week Ended	Gasoil and Distillate Stocks Barrels	Gasoil and Distillate Stocks Week Ended	Residual Fuel Oil Stocks Barrels	Residual Fuel Oil Stocks Week Ended
Highs:												
1941	4,337	11-22	4,120	10-18	266,187	3-29	99,727	3-29	[1]54,983	11-15	102,448	1- 4
1942	4,337	2- 7	3,961	1- 3	263,208	3-28	[1]109,281	3-14	49,861	11-14	95,857	1- 3
1943	4,436	11-13	4,331	12- 4	245,752	5-29	94,159	3-20	46,187	11-27	72,881	1- 2
1944	[1]4,745	9-16	[1]4,752	6-17	240,992	1- 1	89,162	4- 1	43,568	9-16	62,240	9-16
Lows:												
1939	[3]1,601	8-26	3,125	2-18	[2]229,127	10-12	71,152	10- 7	20,722	4-15	105,397	4- 8
1941	3,364	1-11	3,490	1-18	240,399	11-15	79,923	10- 4	28,382	4-12	90,914	7-12
1942	3,297	7- 4	3,393	5-23	231,896	12-12	75,934	12- 5	29,240	4-25	72,962	12-26
1943	3,821	1- 9	3,579	3-13	232,191	1- 9	68,182	10-16	30,732	4- 3	57,596	12-25
1944	4,357	1- 1	4,228	2-12	[4]220,623	9- 9	76,302	1- 1	30,232	4-29	49,737	3-18

TRENDS OF 1943 AND 1944

Trends in Week Ended:	Crude Oil Production Daily	Crude Oil Runs to Stills Daily	Crude Oil Stocks Week End	Gasoline Production Weekly	Gasoline Stocks Week End	Gasoil and Distillate Production Weekly	Gasoil and Distillate Stocks Week End	Residual Fuel Production Weekly	Residual Fuel Stocks Week End
1943:									
January 2	3,871	3,734	233,928	10,957	82,420	4,285	42,913	7,683	72,881
January 30	3,826	3,698	233,863	10,339	88,830	3,888	37,057	7,452	70,763
February 27	3,873	3,709	235,217	10,566	93,157	4,230	32,939	7,839	70,140
March 27	3,896	3,742	239,126	10,231	94,079	3,541	30,980	8,018	67,938
April 24	3,913	3,737	242,035	10,583	91,001	3,954	31,142	8,168	67,455
May 29	3,970	3,679	245,752	10,656	83,937	3,798	32,274	7,672	67,682
June 26	3,955	4,015	242,657	11,092	79,589	3,876	34,044	8,126	67,960
July 31	4,133	3,788	238,420	11,127	74,977	3,765	36,363	8,478	66,877
August 28	4,196	4,227	236,170	12,420	72,525	4,351	37,928	8,732	67,250
September 25	3,344	4,156	233,013	12,206	70,024	4,608	40,328	8,560	66,659
October 30	4,383	4,176	247,219	12,813	69,297	4,642	44,591	7,968	63,833
November 27	4,414	4,261	239,761	12,638	69,980	4,379	46,187	8,633	62,143
December 25	4,363	4,185	241,310	12,597	74,024	4,457	43,791	8,689	57,596
1944:									
January 1	4,357	4,453	240,992	13,192	76,302	4,575	42,310	9,141	57,330
January 29	4,409	4,359	240,251	13,427	81,085	4,054	37,266	8,889	52,857
February 26	4,423	4,377	237,137	13,183	85,248	4,558	33,766	8,952	51,387
March 25	4,385	4,443	236,285	13,362	87,287	4,979	31,319	9,013	51,660
April 1	4,383	4,435	234,667	13,824	89,162	4,450	30,530	8,367	51,326
April 29	4,431	4,300	235,342	13,126	88,462	4,284	30,236	8,398	49,985
May 27	4,514	4,532	234,423	13,502	86,468	4,702	32,035	8,568	49,812
July 1	4,587	4,638	228,860	14,052	83,559	4,496	35,360	8,872	52,235
July 29	4,608	4,627	225,112	14,115	82,665	4,833	38,135	8,900	56,280
August 26	4,667	4,698	222,931	14,112	80,740	4,566	41,543	8,680	59,339
September 2	4,657	4,592	223,482	14,265	79,921	4,664	41,964	8,293	59,876
September 9	[1]4,689	4,584	[4]220,623	14,093	79,576	4,440	43,053	8,999	60,735
Sept. 16, 1944	[1]4,745	4,585	.....	14,201	78,726	4,470	43,556	8,214	62,240
Sept. 18, 1943	4,375	4,222	[5]234,389	12,737	70,330	4,287	38,998	8,562	66,875
Change:									
In week	+56	+1	−2,859	+108	−850	+30	+1,503	−785	+1,505
In year	+370	+363	−13,766	+1,464	+8,396	+183	+4,558	−348	−4,635
In year	+8.5%	+8.6%	−5.9%	+11.5%	+11.9%	+4.3%	+11.7%	−4.1%	−6.9%

[1] All time peak. [2] Lowest between January, 1922 and July 1, 1944. [3] Lowest since October, 1922, due to shutdown of six Mid-Continent states. [4] Lowest since December, 1921. [5] Stocks, September 11, 1943.

Maritime Deliveries

Sixteen standard tankers and three concrete barges were among the 119 vessels delivered by United States shipyards during August, it was reported by the Maritime Commission.

Six of the tankers were delivered by the Sun Shipbuilding and Dry Dock Company, Chester, Pennsylvania, and an equal number by the Kaiser Company, Inc., Portland, Oregon, the remaining four coming from the Alabama Dry Dock and Shipbuilding Company, Mobile, Alabama.

International Developments

Only Two Areas Now Producing in Colombia

Current crude oil production in Colombia, amounting to 54,000 barrels daily, is being drawn from only two concession areas, the DeMares, in Santander, and the Barco, in Norte de Santander, adjacent to the Venezuelan border. The DeMares area, controlled by Tropical Oil Company, is yielding about 40,000 barrels daily, from the Infantas and La Cira fields, while 14,000 barrels daily is being produced and shipped from the fields in the Barco, Petrolia, Tibu and Rio de Oro.

Shell-Union's Dificil field is still a one-well field, in spite of the number of holes put down there. The Casabe field, belonging to the same company, has 20 producing wells and only one dry hole, but all wells are shut in, for lack of shipping facilities. Arrangements may soon be completed for shipping the Casabe oil to Covenas via the Sagoc pipeline, which serves the De Mares fields on the opposite side of the Magdalena River.

Three wildcat drilling operations in Colombia are all reported held up. Socony-Vacuum Oil Company's Cantagallo 5 was last reported fishing at 7059 feet. Floresante 1, of the same company, with surface casing set at 639 feet, is reported awaiting rig equipment. Shell-Union's San Martin wildcat is only 2100 feet down, and is fishing again. It has been sidetracked at least twice.

Russians Find New Field On Shore of Caspian Sea

Discovery of an oil field is reported at Kashkara, only a few miles west of Astrakhan, in the Volga delta region, the first in the area along the northwestern shore of the Caspian Sea and midway between the producing areas of Grozny and Emba. Oil is being produced from 750-foot levels and five producers have been completed. Storage facilities, a labor camp and a 10-mile pipeline to Astrakhan are reported completed, and plans call for the driling of more than 40 more wells on proved acreage.

Subsidies for Alberta Stripper Wells Wanted

The Alberta Petroleum Association is preparing an appeal to the Dominion Oil Controller to initiate subsidy payments to stripper-well operators. The move follows an announcement that operators of fields in Montana, just across the border, are to receive 35 cents per barrel to remain in operation. Alberta fields are in the same competitive area, and it is held that a similar subsidy would justify the operation of a number of South Alberta wells now shut down.

New Venezuelan Concession

Venezuelan Oil and Transport Company, Ltd. has been granted exploration and development rights on eight separate parcels of land in the State of Guarico, in Venezuela. The blocks range in size from 57 to 4521 hectares and total 20,000 hectares. The concession was granted subject to refining restrictions of the new petroleum law if production is obtained and subject to an initial exploration tax of 50 Bolivares per hectare.

Scotland Plans Expansion Of Its Shale Industry

The well established shale oil industry of Scotland is to be still further expanded by development of a newly discovered deposit of excellent oil shale on one of the larger islands of the Hebrides, off the northwest coast. According to the Scottish Council on Industry plans have been completed for working and processing the rock.

Oil Interest in Alaska Beginning to Diminish

Recent reports out of the Canadian Northwest and Alaska indicate that actual results from both the Alaska Highway and the Canol project are less important than was anticipated in planning them, while there is now no great enthusiasm in further developing either Northwest Canadian or Alaskan oil possibilities.

Because there is more crude oil flowing through the pipe line from Norman Wells than they know what to do with at Whitehorse, 3000 gallons per month are being used to oil the streets of the new northern metropolis.

Diminution of the Japanese menace is making it less important to produce all the high octane which Whitehorse refinery is capable of handling.

Storages of crude at Whitehorse are overflowing.

The Canadian government as a health protection measure, in cooperation with the United States authorities, decided to put down Whitehorse dust. So the oil was apportioned for sprinkling on the streets.

Standard Oil Company of California will not construct any stations along the Alaska highway, it was stated recently by H. D. Collier, president, when visiting at Vancouver, British Columbia, Canada. The company has made this decision, he said, because in his opinion neither Canada nor the United States will spend the money necessary to maintain this road nor any other Alaska-United States highway.

"There was some discussion," he admitted, "of developing oil properties in Alaska but we are not going to venture anything of this nature. I don't believe results would justify the work and the expense involved."

His company, he said, has no plans for oil exploration in British Columbia, although it is doing considerable work in southern Alberta.

No further reduction in gasoline rations issued to motorists is anticipated by H. D. Collier.

May Dispose of Holdings

Following completion of its two El Retiro wells as dry holes, it is rumored that Richmond Petroleum Company of Colombia desires to dispose of its concession rights covering the entire Caraballo tract, in Magdalena province, south of the Bay of Salamanca.

Carbon Black Plant Near Guymon, Oklahoma, Asked

Permit to construct a carbon black plant near Guymon, Oklahoma, utilizing natural gas from the Hugoton gas field is being sought by the Cabot Carbon Company. The plant would have a daily capacity of 30,000,000 feet of gas and would use the channel process.

Hugh Burdette, vice president of Cabot Carbon Company, explained the plant would be erected for the government through Defense Plant Corporation and would be operated by the company. The permit is being sought from the Oklahoma Corporation Commission and if granted would give the area three carbon black plants, including one operated by Cabot and another operated by General Atlas Carbon & Chemical Company.

Water Encroachment at West Edmond Is Studied

A special committee of the West Edmond Pool Engineering Association is making a detailed study of salt water infiltration in wells in the southwest section of the West Edmond pool where 10 wells have shown water in varying amounts some of which offset clean oil wells. Producers showing water started cutting when completed or shortly afterward and the committee will try to find the source of water encroachment although engineers believe that the flood head is static.

Hawn and San Andres Sell Reagan County Properties

Properties of R. H. Hawn and San Andres Production Company in the Barnhart field of southeast Reagan County, have been purchased by General American Oil Company, of Texas. The consideration is said to be $1,200,000, $900,000 of which was cash, and $300,000 in oil payments.

The property is located in block 48, University Survey, Sections 1, 2, 8, 9 and 10, and consists of 1000 acres on which there are four producers.

Geochemical Course Is First Ever Offered

Geochemical prospecting for oil and minerals will be among the topics discussed in a course in geochemistry to be given by Dr. Hardee Chambliss in the Graduate School of the United State Department of Agriculture.

This is believed the first course of its kind ever offered in this country. Dr. Chambliss is a former dean of the School of Engineering, Catholic University of America, who has joined the staff of the Geophysical Instrument Company, Arlington, Virginia.

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MARK STUMP, formerly chief geologist with Sunray Oil Company, has joined British-American Oil Producing Company, in charge of developments at Calgary, Canada. M. T. Hoke, formerly with Fain-Porter, Inc., is in charge of the company's geophysical work, and John Watson, formerly with Sinclair Prairie Oil Company, is now executive assistant to H. C. Arnold.

WINFIELD GIVENS has been transferred by Sun Oil Company from Dallas, to take charge of the company's new land office in Philadelphia.

U. S. Field Operations

Oklahoma

Another Test Scheduled For McClain Discovery

The Carter Oil Company's discovery in McClain County, Johnson 1, C SW SE 30-8n-2w, Anadarko Basin area, after flowing 100 barrels an hour on initial production test, developed a small amount of salt water and perforations at 8191-8209 feet have been squeezed off and operator will reperforate for another test. Production is from second Wilcox sand and the strike is 3½ miles northeast of Carter's Cottingham 1, which was worked over to shut off salt water before completing at 10,645 feet and is now producing 200 barrels of oil daily.

Lincoln County: Sinclair Prairie Oil Company's Danker 1, SE NW SE 28-14n-3e, opens a pool 2½ miles south of the Chandler field. Dry in the Wilcox sand at 5250 feet, the well was plugged back to the Jones-Cleveland sand at 3475-98 feet, where it flowed 150 barrels of high-gravity oil on initial 24-hour production test. The discovery opens up a considerable area. Dudley D. Morgan et al's Blakeley 1, NE NW NW 21-15n-5e, wildcat northeast of Davenport, topped Mayes lime at 4070 feet and was drilling below 4245 feet toward Hunton lime.

West Edmond: A trio of new producers in the Hunton lime zone gave the pool 149 producers with 5 other wells due to test soon. In the south end of the pool Gulf's Paul 2, C NE SE 8-13n-4w, flowed 165 barrels of oil an hour for 4 hours through choke with 3,500,000 feet of gas, Phillips completed 2 producers in the north end of the pool, Clell 3, C NW NE 6-14n-4w, which flowed 108 barrels of oil in 3 hours, and Edmond 4, C NE SE 6-14n-4w, good for 320 barrels in 3 hours. The new producers are in Oklahoma County and have been pinched in to 200 barrels daily. In Canadian and Logan Counties, Sohio and Phillips are preparing to test Leonard 1-C, C NE NW 25-14n-5w, and Derr 1, C SE SW 29-15n-4w, respectively.

Atoka County: Wakefield and Palmer's Zweigel 1, NE SW NW 16-3s-10e, near Boggy Depot, which has been taken over by Burns Oil Company of Shawnee, was reported making gas with a show of oil after it was agitated with bailer. The test is considered to be on structure with Wapanuka and Woodford topped at 2596 and 2806 feet, respectively; Hunton at 3065 feet and Sylvan shale at 3090 feet. Depth is 3155 feet and the well is headed for 4100 feet.

Caddo County: While tubing and rods were being run in Sinclair Prairie's Kahle, NEC 9-5n-9w, a Marchand sand well in the Cement pool, the well headed and flowed 225 barrels of oil into tanks. After penetrating 7 inches in the formation at 6370 feet, it swabbed 680 barrels of oil in 17 hours but efforts to make it flow failed and the well went dead. Near Apache, The Texas Company is rigging up Brown 1, NE SW NW 18-5n-11w, a wildcat.

Garvin County: The Texas Company's East Pauls Valley extension attempt, Burns 1, NE NW NW 20-3n-2e, recovered 480 feet of salt water with no show of oil or gas on drill stem test at 2931-48 feet in the Pennsylvanian. The well offsets dry holes south and west and it looks as if the producing horizon is dipping to the southwest. E. J. Kubat et al's Dixon 1, NE SW SE 9-3n-1e, southwest of the Pauls Valley pool, was shut down for orders. With Bromide topped at 3528 feet, production test about 3 weeks ago at 3515-20 feet recovered between 5 and 10 million feet of gas and a spray of oil before the well went dead. Further tests after perforations were squeezed and pipe reperforated recovered salt water in varying amounts. Total depth is 3580 feet in the McLish lime.

Carter County: Sun Oil Company's Yell 1, NW NW NW 8-5s-1w, outpost in the new Lone Grove pool, set pipe and was ready to test following drill stem test at 4041-74 feet. With the tool open 47 minutes the well flowed into pits at the rate of 30 barrels an hour. It was drilled to 4281 feet but best pay showed at 4040-68 feet.

West Moore: Hunton lime possibilities look poor as Mid-Continent Petroleum Corporation's Harris 1-B, NE NE NW 32-10n-3w, Cleveland County, which flowed 550 barrels of oil in 17 hours on initial production test, was reported declining rapidly. Latest gauge gave the well 60 barrels of oil and some water in 24 hours. The well was dry in the Wilcox and was plugged back for completion at 8010-60 feet. Mid-Continent's Mullins 2 in section 29, was drilling for the Wilcox at 8727 feet with the formation expected to be topped at 8790 feet.

Pottawatomie County: Cities Service Company appears to have a pool opener south of the Centerpoint pool. Its Harbour 1, NE NE NW 13-9n-2e, was preparing for a test after pipe was landed at 5787 feet following oil shows on drill stem tests in the Hunton and Earlsboro zones topped at 4952 and 5594 feet.

Oklahoma Commission to Set Two-Month Production

Oklahoma State Corporation Commission has set Wednesday, September 27 for hearing the application of Walker T. Pound, conservation officer, to determine the amount of oil to be produced during October and November, and to allocate gas production in the West Cement Medrano pool and the lower Charlson sand of the Chickasha pool.

☆

E. FLOYD MILLER, chief geologist for A. G. Oliphant, has returned to Tulsa, after an absence of seven years.

Wells Completed in the United States in Week Ended September 23

Data preliminary and subject to revision. Revised and more complete data on all completions shown in monthly summary of drilling, published in second issue of each month. More detailed data on wildcats published in third issue of each month.

State or District	FIELD COMPLETIONS: New Wells: *Oil	Gas	†Input	Dry	Total	Old Wells Deepened	WILDCAT COMPLETIONS: *Oil	Gas	Dry	Total	ALL COMPLETIONS: This Week	Last Week	Cumulative: This Year	Last Year
Alabama	....	....	....	....	....	....	1	....	3	4	4	3	29	2
Arizona	....	....	....	....	....	....	....	....	....	....	....	....	6	3
Arkansas	3	....	....	....	3	....	....	....	....	....	3	1	165	186
California	36	....	....	....	36	....	....	....	3	3	39	48	1,497	1,022
Colorado	1	....	....	....	1	....	....	....	....	....	1	1	20	21
Florida	....	....	....	....	....	....	....	....	....	....	....	....	1	1
Georgia	....	....	....	....	....	....	....	....	1	1	1	....	6	2
Illinois	23	....	....	8	31	....	....	....	3	3	34	47	1,437	1,271
Indiana	....	....	....	1	1	....	....	....	3	3	4	12	225	192
Iowa	....	....	....	....	....	....	....	....	....	....	....	....	2	3
Kansas	13	....	....	....	13	....	1	....	6	7	20	34	1,288	1,207
Kentucky	10	....	1	3	14	....	....	....	2	2	16	21	557	260
Louisiana	6	3	....	6	15	....	....	....	2	2	17	31	559	454
North Louisiana	2	2	....	2	6	....	....	....	1	1	7	10	200	204
South Louisiana	4	1	....	4	9	....	....	....	1	1	10	21	359	250
Michigan	4	2	....	4	10	....	....	....	4	4	14	11	473	415
Mississippi	3	....	....	....	3	....	....	....	2	2	5	10	138	67
Missouri	3	....	....	....	3	....	....	....	....	....	3	5	34	20
Montana	6	1	....	2	9	....	....	....	....	....	9	11	256	162
Nebraska	....	....	....	....	....	....	....	....	....	....	....	....	7	34
New Mexico	6	....	....	....	6	....	....	....	....	....	6	7	295	187
New York	15	....	10	2	27	....	....	....	....	....	27	25	911	876
Ohio	5	11	....	5	21	....	....	....	....	....	21	20	676	621
Oklahoma	28	3	2	....	33	....	3	....	4	7	40	33	1,254	993
Pennsylvania	27	14	15	3	59	....	....	....	....	....	59	66	2,164	1,828
Tennessee	....	....	....	....	....	....	....	....	....	....	....	....	9	6
Texas	80	13	1	20	114	....	1	....	21	22	136	104	4,414	2,969
E.Tex.Bor. Co.'s	....	....	....	....	....	....	....	....	....	....	....	1	24	16
E. Texas Field	....	....	....	....	....	....	....	....	....	....	....	....	3	5
Rest of E. Texas	5	....	....	....	5	....	....	....	....	....	5	3	211	166
North Texas	11	1	....	6	18	....	1	....	5	6	24	26	1,019	718
W. Central Tex.	1	....	1	2	4	....	....	....	4	4	8	4	300	272
West Texas	33	....	....	1	34	....	....	....	1	1	35	24	1,163	653
Tex. Panhandle	5	3	....	2	10	....	....	....	....	....	10	4	162	145
G. Coast, Upper	6	5	....	1	12	....	....	....	5	5	17	9	418	233
G. Coast, Lower	17	3	....	7	27	....	....	....	4	4	31	23	708	453
Southwest Texas	2	1	....	1	4	....	....	....	....	....	4	10	326	265
S. Central Tex.	....	....	....	....	....	....	....	....	2	2	2	....	80	43
Utah	....	....	....	1	1	....	....	....	....	....	1	....	1	....
West Virginia	4	21	....	5	30	....	....	....	....	....	30	20	676	461
Wyoming	6	....	....	....	6	....	....	....	....	....	6	8	128	93
Total U. S.	279	68	29	60	436	....	6	....	54	60	496	518	17,228	13,356

* Includes distillate wells. † Includes salt water disposal wells.

Kansas

Commercial Production Found in Kiowa County

Commercial production has been established for the first time in Kiowa County and wildcats shows in Stanton and Hodgeman may add those to the list of producing counties.

Kiowa County's first is Lion Oil Refining Company's Alford 1, SEc SW 14-30s-19w, 12 miles southeast of Greensburg, which is flowing 3,200,000 feet of gas daily with 1100 pounds shut-in pressure from Mississippi lime. Casing was landed at 5113 feet, total depth, and the test was perforated and acidized from 5035-53 feet.

Stanton County: Eight miles west of the Hugoton gas pool, Stanolind Oil & Gas Company's Col-Mac 1, center Section 32-30s-39w, reported a number of gas shows from cores taken between 2396 and 2577 feet. First shows were in the Herrington and gas was reported in the Krider, Winfield, Ft. Riley and Florence Flint formations.

Hodgeman County: Continental Oil Company has set pipe at 4748 feet in Gleason 1, SE NE NW 5-24s-21w, for a test of Lansing and Mississippi limes. Good gas and oil shows were reported in the formations with Lansing topped at 4024 feet. Cores were taken between 4188 and 4690 feet.

Barber County: Dickey Oil Company opened a pool 2½ miles northeast of the Skinner Northwest field. Following perforating and acid treatment at 4394-4417 feet, the Hargis 1, SE SW 3-31s-14w, flowed 3,800,000 feet of gas with a spray of oil in 16 hours. Reperforated and acidized at 4396-4431 feet the flow increased to 4 million feet of gas.

McPherson County: Extension of the Jenday pool a mile southwest loomed as Bay & Westgate Greenland's Meyers 1, NE NW 7-19s-1w, was testing. Mississippi lime was topped at 2928 and casing was set at 3050 feet. Perforated with 24 shots at 2950-56 feet and acidized with 500 gallons, the oil fill-up was 2900 feet.

Cowley County: El Dorado Refining Company's Gilbert 1, SE NE SW 34-33s-3e, wildcat southeast of the Rainbow Bend pool, topped Bartlesville sand at 3370 feet and reported oil show in the Mississippi lime at 3390 feet. Drilling continues below 3460 feet. The Texas Company was drilling below 3100 feet in Graham 1, NE SE SE 7-32s-4e, wildcat 4 miles southwest of the Hittle pool.

Pratt County: Skelly Oil Company was still testing Schriver 1, NEc 33-29s-14w, pool opener 3 miles southwest of the Coats field. At 4563 feet in Simpson, topped at 4551 feet, the well swabbed 210 barrels in 24 hours.

New Mexico

Wildcat Is Scheduled For Santa Fe County

Wildcatting in New Mexico jumped a considerable distance from production this week with a test due for Santa Fe County, 30 miles south of Santa Fe. The well, Dodson & Fullerton 1, is to be drilled by P. B. English and associates on the strength of showings found in a well previously drilled. Cable tools will be used.

Eddy County: The Texas Company has staked No. 1 Skidmore, wildact in the northeastern part of the county, 660 feet from the south and 660 feet from the west lines of 24-20s-31e, and was moving in a spudding machine.

Martin Yates' No. 1 Kaiser, wildcat in the northwestern part of the county, 29-18s-27e, was drilling below 1417 feet in lime, after logging a zone from 1395-1402 feet good for an estimated production of about 20 barrels daily.

The Texas Company's Compton 2, 17-16s-31e, showed for about 310,000 feet of gas from 2930-40 feet, and was shut down.

Lea County: Humble's No. 1 Federal-Leonard, wildcat in the extreme southeast part of the county is drilling below 11,780 feet in shale and dolomite. Shows were encountered at 11,712 feet.

Humble's Federal-Keinath, scheduled 11,000-foot Ordovician test, is drilling in lime below 7760 feet.

Continental Oil Company's 2-B-23 Skaggs, 11,000-foot test east of Monument, is in lime and cherty dolomite, drilling below 9620 feet.

West Texas

Makes Oil and Gas Show Andrews County Wildcat

Stanolind Oil & Gas Company's 1-D University, wildcat, five miles northwest of the Embar Ellenburger field, Andrews County, recovered 600 feet of drilling mud heavily cut by oil and gas, and gauged 420,000 feet of gas on a 60-minute drill stem test, from 8099-8107 feet. A core from 8096-8099 feet recovered a foot of crystalline lime showing oil. A second core from 8099-8107 recovered 2 feet, 9 inches of dense, crystalline lime and some chert, with pinpoint porosity. The well was drilling below 8125 feet, in a section believed to be Silurian.

Champlin Refining Company's 1-B University, wildcat, 1¼ miles north of Stanolind's test, was shut down to repair pump at 8280 feet.

Phillips Petroleum Company has abandoned its 57 University, in Sec. 29, block 10, University survey, two locations east of the nearest Ellenburger production in the Embar pool, at 8045 feet, in granite and shale, with no Ellenburger indicated.

The Texas Company's 1-L University, east flank test in the Emma pool, was preparing to swab and test further, after recovering sulphur water with a small oil show, at 5490 feet.

Magnolia Petroleum Company's 1-A Ralph, 11,000-foot Fullerton outpost test, was drilling below 2812 feet. The same company's 1-11 University, another Fullerton outpost, was drilling below 3625. Four tries at a drill-stem test failed because the packer did not hold, and it was decided to drill deeper before trying for another test.

Dawson County: Seaboard Oil Company of Delaware's Frank M. Weaver 1, wildcat 9 miles west of Lamesa, Sec. 34, Block M. EL&RR Survey, was preparing to plug and abandon at 5113, total depth, in lime. Good porosity was cored from 4885-4902 feet, but the core recovered 11½ feet of dolomite bleeding sulphur water. Top of the San Andreas was logged at 4660 feet.

Crane County: Magnolia Petroleum Company's State-Flood 1, outpost to the McKee pool, recovered 1300 feet of salt water, with a small amount of gas-cut mud on top, from a drill stem test at 5850-5870 feet, Waddell section of the Simpson, where the McKee field pay was supposed to have been picked up. The well is drilling below 5899 feet in shale and lime.

Upton County: Atlantic Oil Refining Company's Atlantic Fee 1, northeast outpost of the Crossett pool, southwestern part of the county, swabbed 6 barrels of fluid per hour, 96 percent oil and 4 percent basic sediment. Perforations were from 5400-5420 feet and the well received 118 shots, then acidized with 500 gallons of mud acid and 1000 gallons of regular acid.

Lamb County: Woodley Petroleum Company's wildcat, W. E. Bird 1, Sec. T-T, A. Thompson survey, cored from 4240-4250 feet and recovered Oolitic dolomite with stains of oil. A second core from 4340-50 feet also showed stains. Top of the San Angelo was logged at 4510 feet. The well was drilling below 4695 feet.

Gaines County: Amerada Petroleum Corporation's C. H. Jones 1, wildcat two miles southwest of the Wasson pool, Sec. 59, block AX, PSL survey, is drilling below 7129 feet.

Pecos County: Standard Oil Company of Texas' MacDer Company 1-3, prospective new pool opener from the Wolfcamp lime, flowed 22 barrels of oil on a 24-hour test, through ⅜-inch choke, on 2-inch tubing, from between 4900-60 feet and 4981-86 feet. Total depth is 5374 feet, in granite, but the hole was plugged back to 5020 feet. The well is located 660 feet out of the southwest corner, Sec. 64, block 11, H&GN Ry. Co. survey, 3½ miles east of two Wolfcamp lime gassers, and 7 miles southeast of Bryce-McCandless' Ellenburger discovery.

Humble's State National Bank of El Paso 1, on the W. T. Turney block, north central Pecos County, drilling below 5677 feet in lime, swabbed a small amount of oil from 5425-45 feet, probably from the Wolfcamp. Projected depth is 6500 feet.

Ward County: Gulf Oil Corporation's J. Edwards B-2-T is drilling below 4754 feet, with no cores reported since 4600 feet. A slight show was recovered form 4488-4580 feet. The company's Edwards 1-E is drilling below 7435 feet in lime and shale.

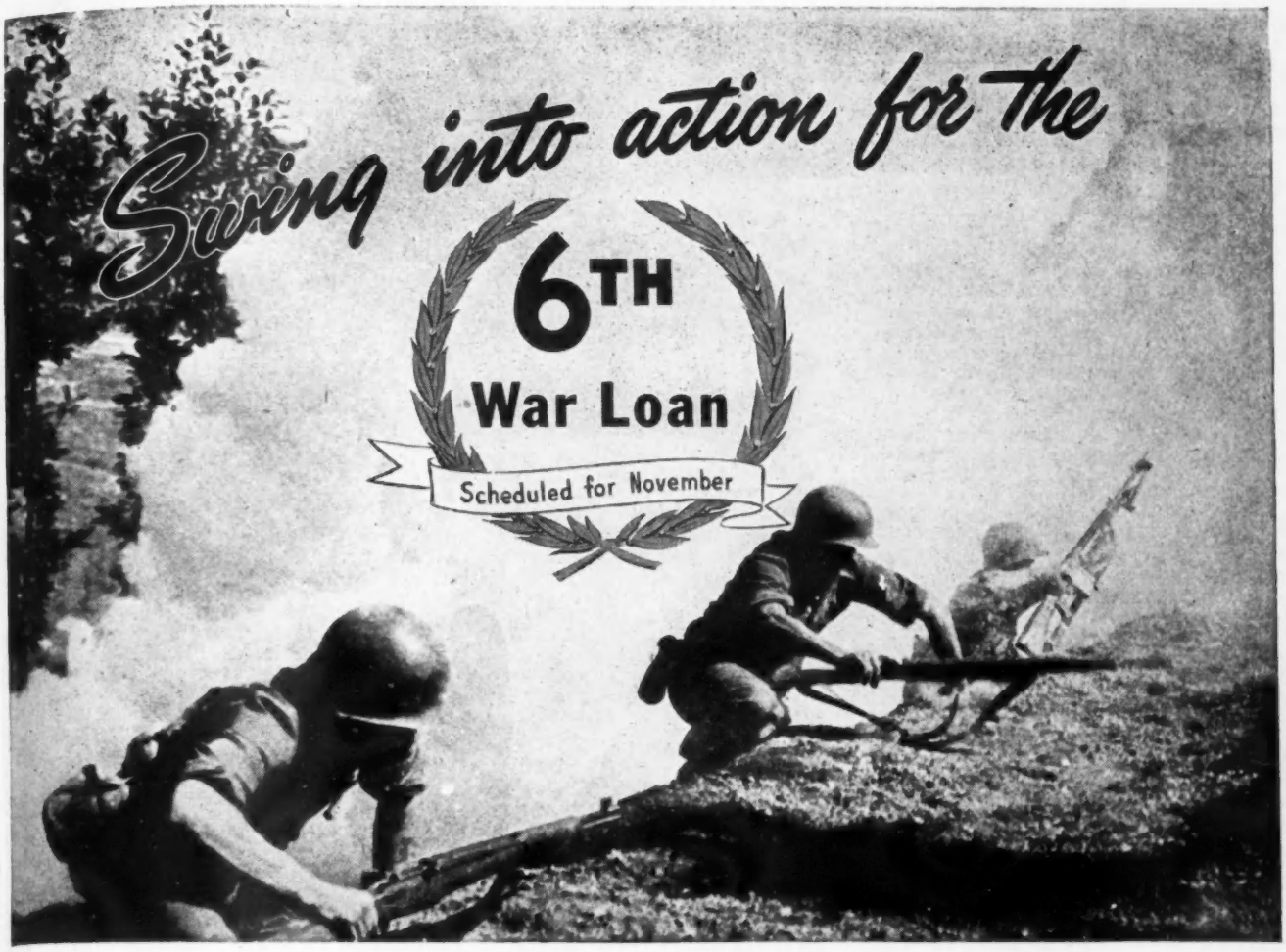
Shell Oil Company's deep test in the Monahans pool, Sealy-Smith 4, is drilling past 10,165 feet, in shale and lime. Sealy-Smith 5 is below 8585, drilling in lime and chert.

Yoakum County: Honolulu Oil Company was plugging its Hertel 1, wildcat, at 5392, after logging sulphur water. This test was in the C SE NW, 264-D, John H. Gibson survey.

Texas Panhandle

Gray County: Stanolind Oil & Gas Company's Benedict 5 swabbed 26 barrels of oil per day at 2610 feet. The test is drilling below 3038 feet. Shows were encountered at 2950 feet and at 2975-80 feet. It is in section 55, block B-2.

Oldham County: Stanolind's Herring 1, H-3 League 307, is trying to loosen stuck pipe at 7274 feet.



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1 BOND COMMITTEE—Appoint a 6th War Loan Bond Committee from labor, management and each representative group of the firm.

2 TEAM CAPTAINS—Select a team captain, for each 10 workers, from men and women on the payroll—but not in a supervisory capacity. Returned veterans make most effective captains.

3 QUOTA—Set a quota for each department and each employee.

4 MEETING OF CAPTAINS—Give a powerful presentation of the importance of the work assigned to them. Instruct them in sales procedure. Have them carefully study the Treasury Booklet, *Getting the Order.*

5 ASSIGNMENTS—Assign responsibilities for:

(a) *Music, speeches and announcements of the opening rally.*

(b) *Pre-drive letter to employees from management and labor.*

(c) *Competitive progress boards.*

(d) *Meeting schedules, etc.*

6 CARD FOR EACH WORKER—Dignify each personal approach with a pledge, order, or authorization card made out in the name of each worker. Provide for a cash purchase or installment pledge. Instruct each captain to put a pencil notation on the card to indicate the subscription he expects to solicit from each worker.

7 RESOLICITATION—People don't mind being asked to buy more than once. Resolicit each employee toward the end of the drive in a fast mop-up campaign. Call upon your State Payroll Chairman; he's ready with a fully detailed plan—NOW!

8 ADVERTISE THE DRIVE—Use all possible space in the regular media you employ to tell the War Bond story.

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THE OIL WEEKLY

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North Texas

Caddo Lime Pool Features Clay County Activities

Opening of a Caddo lime pool featured development in Clay County. D. D. Feldman No. 1 H. D. Stine, 3½ miles southeast of Ralson, flowed 40 barrels of 46 gravity oil per hour for 8 hours after drilling out cement plug to 5604 feet. Total depth is 5628 feet. The well was cemented at 5607 feet with 250 sacks. When tubing was perforated, the mud was replaced with water, and the well kicked off, flowing an estimated 50 barrels the first hour. Then on an eight-hour test, production settled to 40 barrels per hour, through 2-inch tubing, ¼-inch choke.

Shell Oil Company's L. P. Hapgood "A" 1, J. Walker Survey, 7 miles northwest of Bellevue, logged a show of oil at 5824-5830 feet, and a second show from 5835 to 5848 feet. A drill stem test recovered 10 feet of mud with no show. Drilling was resumed and a second drill stem test taken after the Chappel was topped at 6165. Core showed hard lime with slight porosity from 6185 to 6200 feet. The drill stem test recovered salty mud and 1070 feet salt water, with no shows.

Continental Oil Company's J. P. Welch 1, section 26, Freestone CSL survey, logged a show of oil at 4155-4163 feet.

Cooke County: Kadane-Griffith Oil Company's S. B. Hopkins 1, wildcat 6 miles southwest of Muenster, settled to 500 barrels daily, natural flow with no water, total depth of 2980 feet. This well is considered a 1¼-mile south extension for the Danglemeyer, Ellenburger, lower Ordovician pool of northwestern Cooke County.

The Texas Company abandoned C. C. Hildebrand 1, wildcat in the R. Trevino Survey, 6½ miles northwest of Muenster, after an electric log was run, at 4329 feet. At 4068 feet, it logged a good show of oil in granite wash. The company's W. B. Rasure 1, wildcat 9 miles northeast of Marysville, in the J. Massingill Survey, ran tubing and perforated with 15 holes from 6760-70 feet. The hole was then washed with water and swabbed, without recovering any show. Lynch 1, northeastern Cooke County wildcat, also being drilled by The Texas Company was awaiting cement at 4765 feet.

Wichita County: Logging the first Ellenburger show in that part of the county, The Texas Company's re-work, 27 First National Company, was preparing to acidize after bailing free oil from 4105 feet. The Ellenburger was topped at 4094 feet, with a show of oil. At that depth, 5 3/16-inch casing was cemented with 70 sacks. The plug was drilled and soft lime was drilled from 4096 to 4099 feet. From 4101 to 4105 feet, the show became stronger.

The well is located 330 feet from the north and east lines of the south half of Lot 15, KWVFL survey.

Akin & Dimrock have abandoned their Roy Gibson 1, wildcat, 5 miles northeast of Electra, at 2103 feet. A slight show of oil was encountered at 1861-63 feet. This test was 1000 feet from the south line and 200 feet from the east line of Block 271, Waggoner Colony subdivision.

Montague County: Continental Oil Company's deep test in the Hundley field, J. M. Hundley "A" 1, was awaiting a Railroad Commission official test after a preliminary test which showed 105 barrels of oil per hour, from 6242-6524 feet. Depth of the hole is 6476 feet.

Continental's McNutt 1, 2 miles southwest of Bowie, which logged a sand showing oil and showed recovery of 100-feet of oil on a drill stem test at 7005-13 feet, was reported drilling below 7265 feet.

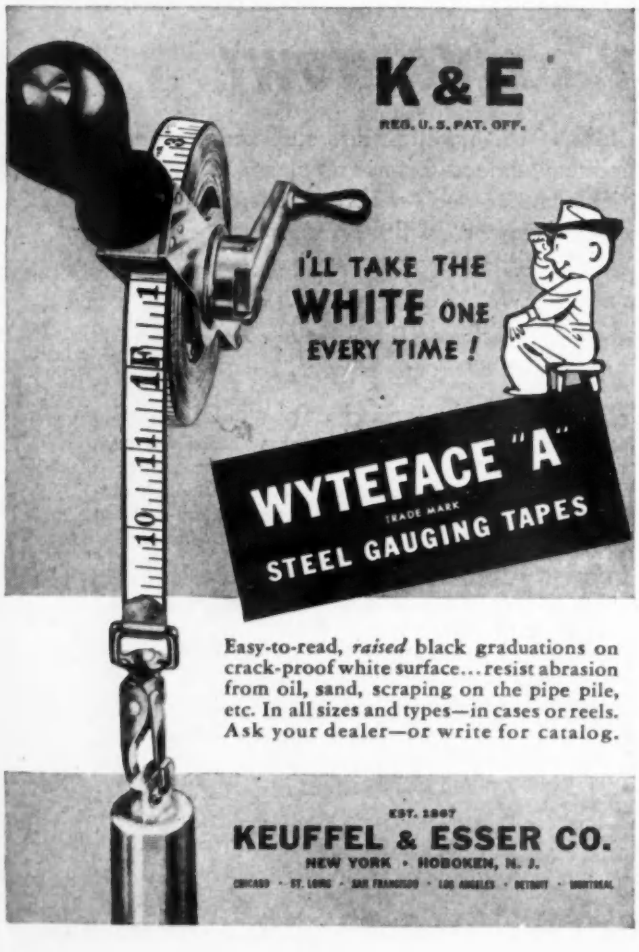
Throckmorton County: Panhandle Refining Company's W. B. Ewalt 1, wildcat 7 miles east of Throckmorton, kicked off after being treated with 1000 gallons of acid, and flowed at the rate of 200 barrels per hour for 2½ hours, from Caddo lime at 4156-4161 feet. Total depth is 5034 feet.

Archer County: The Texas Company's and Bridwell Oil Company's Oil Investment Company 5, wildcat test scheduled to 5500 feet, Block 126, J. Harris subdivision, recovered 9½ feet of Ellenburger, with a fair odor of oil, from 5375-86 feet. The well is coring ahead.

East Texas

Further Paluxy Testing Planned in Manziel Field

Further testing of the Paluxy horizon is planned for the Manziel field, Wood County, with Bobby Manziel rigging up to drill deeper in the old Sun Oil



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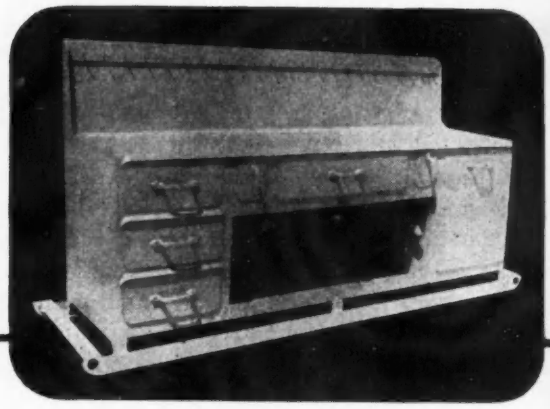

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Company's Herman Johnson 1. This well logged slight oil stains and showed slight porosity from 8456-69 feet, and slight porosity from 8469-73 feet, and was bottomed at 8413 feet. Electric log showed the top of the Austin Chalk at 3955 feet, Georgetown lime at 5193 feet, and the Fort Worth lime at 5860 feet. Location is 4880 feet from the north line and 670 feet from the west line of J. Polk Survey, Manziel field.

Magnolia Petroleum Company's Sallie McGee 1, wildcat 6½ miles south of Yantis, was abandoned after no shows at 9076 feet. The location was 330 feet from the north line and 330 feet from the east line, Block 40, A. Gonzales survey. Elevation was 442 feet.

Henderson County: Ohio Oil Company's W. K. Coker 1, 6 miles northeast of Stockard was abandoned at 9278 feet. Elevation was 508 feet, and the test was located 960 feet from the east line and 503 feet from the south line of the 109-acre tract, Jose M. Cabosa survey. Core record was as follows: 8615-25 feet, sand with fair stain and odor; 8663-70 feet, fair stain and slight odor.

Gulf Oil Corporation is planning a 10,000-foot test a mile east of Baxter, in T. D. Frizzel 1, 335 feet from the north line and 330 feet from the west line of the 100-acre tract, David Cherry survey, Abstract 135.

Bowie County: About 15 miles north of DeKalb, J. H. Hughes Oil Company et al, is moving in a rig for a wildcat test, J. R. Howard 1.

Cherokee County: W. H. Foster's P. J. Bowling 1, wildcat projected in an effort to open deep production from the Travis Peak, 2½ miles southeast of Lone Star, was shut down at 8355 feet for orders. Cuttings from 8030-35 feet had slight to fair porosity, Oolitic limestone with light brown oil stains.

Freestone County: The Texas Company's W. A. L. McKnight 1, about 21 miles southwest of Fairfield, was preparing for a drill-stem test after recovering 9 feet of Woodbine, with good distillate odor. Surface elevation of the well is 458 feet. The Austin Chalk was topped at 3510 feet.

Panola County: Skelly Oil Company made drill stem test of Houston Wills 1, M. A. Romero Survey, 10 miles southeast of Carthage townsite, and recovered about 4700 feet of salt water after perforating the lower Pettit horizon. The well will probably plug back and complete in perforations at 6165-85 feet in the upper Pettit, where it earlier gauged an estimated 20,000,000 to 25,000,000 cubic feet of gas.

Angelina County: Humble Oil & Refining Company has staked location for Angelina Lumber Company 1, W. H. Herring survey, wildcat 10 miles west and slightly north of Lufkin. It will go to 10,000 feet.

Geologic Map Ready for Distribution in October

A new geologic map of the United States compiled after nine years of work by a committee of 16 experts headed by Prof. Chester R. Longwell, will be ready for distribution in October. The map gives a picture of the major structural features of bedrock and its relation to the occurrence of oil, and of large-scale movements of the earth's crust. Varied geological features will be indicated in color.

Approximately 5000 copies will be on sale at cost through the AAPG headquarters at Tulsa.

Southwest Texas

Series of Tests Scheduled For Lavaca Discovery

Sterling Oil & Refining Company was scheduled for a complete series of tests in its Mary Hoffman 1, gas-distilate discovery 4 miles east of Brushy Creek field, Lavaca County. The well has been shut in without gauge or estimate since completion in Wilcox sand at 7710-55 feet a week ago, with pressure 2800 pounds on tubing and 2900 pounds on casing. On preliminary tests at time of completion its behavior was similar to wells in the Brushy Creek field to the west, making the same type of distillate under about the same conditions and from a similar depth. It may prove to be part of the same reservoir, although geophysical work shows a syncline between the two features. Meanwhile, Sterling has made location for the second test, Seekamp & Palmer 1, in the Jonathan Johnson Survey, a mile west of the discovery and toward Brushy Creek production.

Atascosa County: The new Charlotte field in western Atascosa County seems likely to be extended 3900 feet southwesterly by Humble Oil & Refining Company's Lockwood 1, which was drilling below 6909 feet following a drill-stem test in the upper Edwards, from 6891-99 feet, that showed 60 feet of clean oil, 43 feet of oil-cut mud, and 5 feet of mud in 41 minutes. The field was discovered last month by Humble's Pruitt 3, producing from the same level.

Gulf Oil Corporation is preparing to

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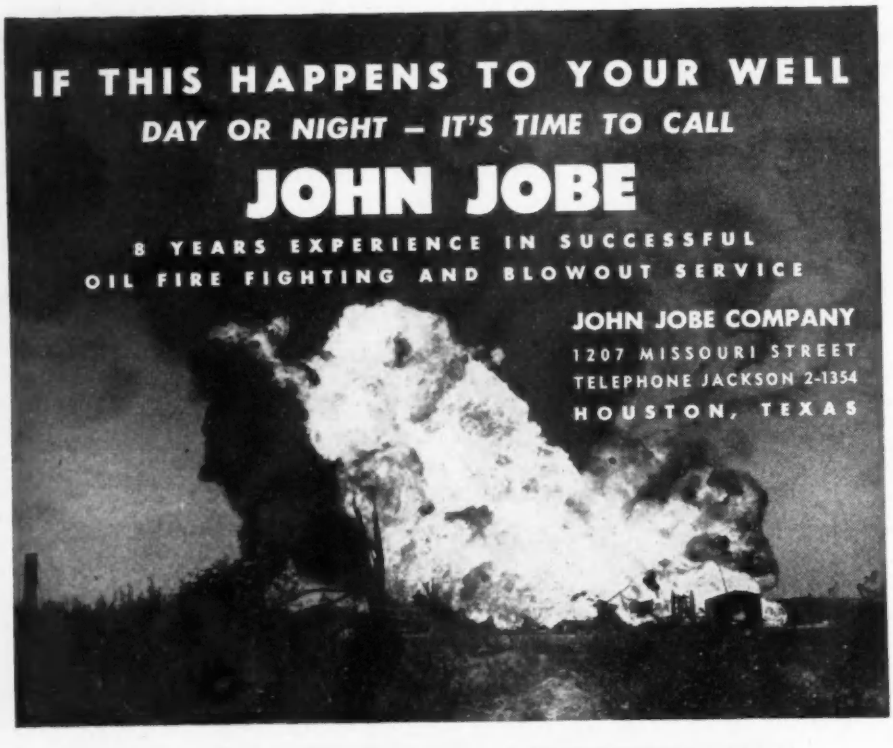
start a 10,800-foot wildcat in the Campbellton area, 12½ miles southwest of the Hobson field. The well is the Ada Tom 1, John Benson Survey, on a 1515-.98-acre lease, and is scheduled to explore the Edwards lime.

In the Imogene field, Humble has completed its Moore & Bernard 1 from total depth of 7594 feet in Edwards lime, flowing 105 barrels daily, 37.2-gravity oil, through a 3/16-inch choke. The company's Coward & Lutgen 1 at Imogene was completed from 7654 feet, making 125 barrels daily through a 3/16-inch choke. During the following 24 hours it declined to 88 barrels, and will probably squeeze and recomplete.

Brooks County: Standard Oil Company of Texas' Braulia G. de Garcia 4, 1½ miles southeast of the Alta Mesa field in southwest Brooks County seems certain to open a new area producing from deep Vicksburg sand, but still is in process of making tests and may finally be completed at a higher level. With total depth 8106 feet and 5½-inch casing set at 8074 feet, a drill stem test was made, using ¼-inch chokes at top and bottom which showed gas at the rate of 10,000,000 cubic feet daily, along with a rich spray of distillate. Flowing pressure 3100 pounds. Operators then set a plug in bottom of the pipe and came back up the hole to make a test of sand at 7385-7400 feet where perforations are now being made.

Jackson County: Sinclair Prairie Oil Company is drilling below the 1333 feet of 9⅝-inch surface casing in its J. W. Atkinson et al 1, new outpost test a mile northeast of nearest production in the Texana field, which produces gas and some oil.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Texas Gulf Coast

Offset to Harris County Discovery Is Planned

Eltex, Ltd., discovery operators in the new Spring field in northern Harris County, are building derrick and setting boilers for the second test, an east offset to the pool opener, on the Blanche Bender tract, Bulrice Survey. The discovery, Bender Estate 1, has completed the potential test started last week end and flowed 126 barrels of 38.3-gravity oil in 24 hours through a ⅛-inch choke with tubing pressure 825 pounds and casing pressure 1100 pounds. Gas-oil ratio was 300-1 and latest shakeout test showed the well making pipe line oil. This producer is in the first Cockfield sand, topped at 6239 feet, the first foot being about half shale, and still in sand at 6249 feet, total depth. Perforations had been made at 6244-47 feet with 4 shots per foot.

Eltex is an American firm, a limited partnership whose members also own widespread interests in other industries, and which presently owns oil production in Jones and Taylor counties, Texas, and in Okfuskee County, Oklahoma. The lease block was purchased from Danciger Oil & Refining Company for $100,000 in oil, payable from 1/16 of ⅞ of the oil, and other small overrides in the block.

Brazoria County: Humble Oil & Refining Company's Frank Schmidt 1 has failed on first attempt to extend production at Danbury Dome to the south, having recovered mostly salt water on initial test. It will test other sands after waiting for cement to set. Total depth is 9284 feet, plugged back to 6962 feet, and casing was perforated at 6974-86 feet for a drill stem test which recovered 200 feet of mud cut with oil, gas, and water, 1800 feet of slightly oily salt water, and 3400 feet of clean salt water.

In the Chocolate Bayou field, Phillips Petroleum Company is preparing to test Allen 1 with total depth 11,500 feet and casing set at 11,492 feet. The company has 3 other wells in the same field nearing the pay, its Banfield 1 drilling below 11,629 feet, and Houston Farms Development Company 1-A

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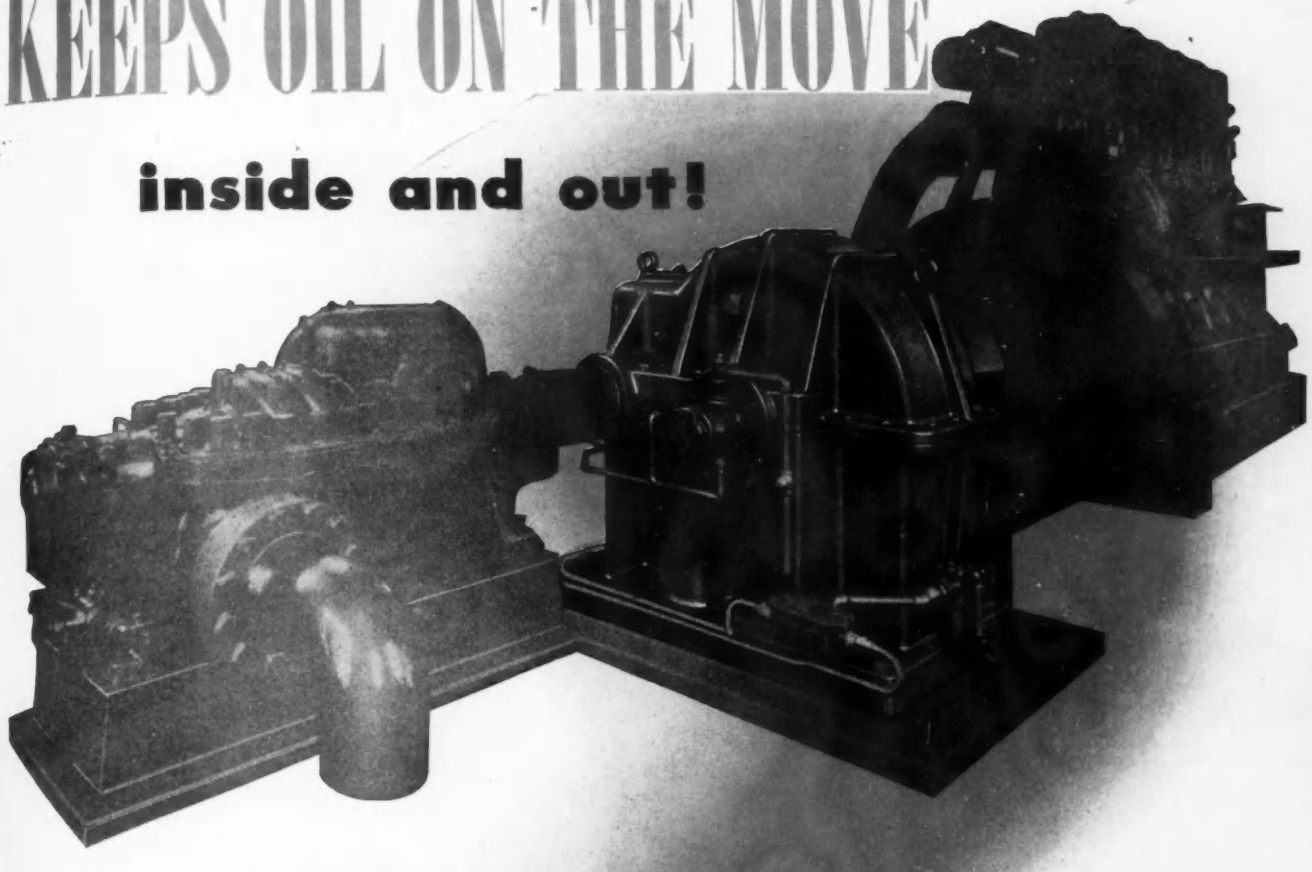

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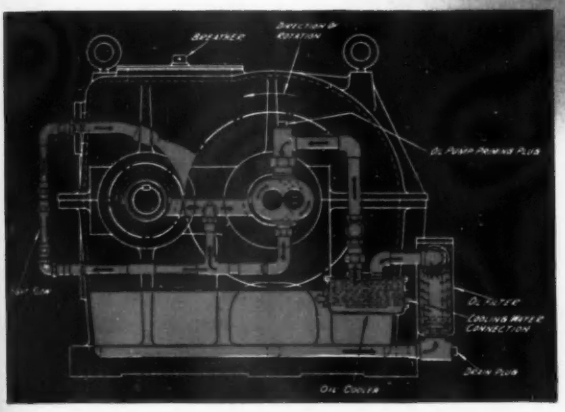

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Westinghouse

GEARED DRIVES

drilling at 10,790 feet, while McKelvey 1 is drilling below 9890 feet.

Wharton County: Humble Oil & Refining Company has come back up the hole to test shallower sands in the Duncan B-2, in the Hungerford area, showing salt water through perforations at 3812-22 feet, and is now waiting on cement after perforations were made at 2988-93 feet for a squeeze job before testing the upper gas sand producing in the Spanish Camp field.

Polk County: Two Wilcox wells have been completed in the old Livingston field, both by Humble Oil & Refining Company. Granbury 5, Lot 11, Viesca Grant, was brought in through perforations at 7029-36 feet, making 97.49 barrels in 12 hours through a 3/16-inch choke, and Granbury 25, in the same lot, perforated 6983-7002 feet for completion flowing 295 barrels daily through a ¼-inch choke. Although other operators have drilled deep tests in the field since the recent development started, Humble still has the only new producers to the Sparta and Wilcox outside of those completed originally in the field a couple of years ago. Shell Oil Company's R. H. Jones 2, now drilling appears favorable, however.

Jefferson County: Glenn McCarthy et al's Hankamer 4, deepest test for the Stowell Field, has completed in an upper regular field pay after perforating casing at 8750-60 feet, flowing 216 barrels daily through a 9/64-inch choke. This well had been taken to 12,505 feet to explore the deeper Frio sands.

American artillerymen in action. The crew of a 90 MM gun in the vicinity of Mignano, Italy, rushes to action station during a protective alert.—*Official Signal Corps Photo.*

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South Louisiana

Sparta-Wilcox Producer Added to Pine Prairie

Another Sparta-Wilcox producer was added to the Pine Prairie Field, Evangeline Parish, with Pan American Production Company's Crowell-Spencer Lumber Company 14, total depth 10,676 feet. Dual completion was in the Sparta and Wilcox sands, Sparta having been perforated at 9558-9610 feet where it made 260 barrels daily through a 13/64-inch choke, and Wilcox completion was through perforations at 10,264-650 feet, where it flowed 325 barrels daily through a 13/64-inch choke.

Acadia Parish: Union Sulphur Company is having considerable difficulty in completing its Gueno 3, expected to open a new deeper sand in the Branch Field. It had to squeeze off some perforations inadvertently made at 9616 feet, and in going down to complete test of the sand at 11,058-90 feet where it perforated later, found a hole in the liner which has to be repaired. When testing commenced, it started showing too much pressure to attempt to handle with equipment then installed.

Sun Oil Company's Button 1, south extension test, Egan field area, is drilling below 8500 feet in shale.

Jefferson Davis Parish: Continental Oil Company's King Corporation 1, wildcat in the Bayou Serpent area, is conditioning mud and circulating while coming out of the hole from 9075 feet, where it was said to have run into a gas showing causing high pressure.

Barnsdall Oil Company's Miller 1, wildcat in the West Tepetate area, is drilling below 9900 feet in shale.

Iberville Parish: Humble Oil & Refining Company's C. G. Robinson 1, a southeasterly extension 1½ miles from the discovery well at Laurel Ridge, is drilling below 10,000 feet in hard sand and shale, and may now be within 700 feet of the discovery pay.

Humble Oil & Refining Company has made location for E. B. Schwing B-1, wildcat 6 miles northwest of the White Castle Field, and a mile east of Grand River in 18-10s-11e, projected to 12,000 feet.

St. Charles Parish: The Pure Oil Company has started erecting derrick for its General American Transportation Company 2, southwest offset to the discovery well in the new Good Hope Field, and Humble has made location for a test in the area. Humble's well will be Sarpy Bros. 1, also in 7-12s-8e, along with Pure's discovery and second test.

☆

VERNON W. BALZER, assistant director of the refining division, District 5 (Pacific Coast), Petroleum Administration for War, has resigned to accept a position with Hallett Manufacturing Co., Los Angeles, as manager of its diesel division.

MAX W. BALL hes returned to his office in Denver after eight months on a consulting job in Michigan and will leave early in September for Washington to take up duties with PAW.

North Louisiana

Distillate Production From Eutaw Discovered

Distillate production from the Eutaw was discovered in the Lake St. John field of Tensas Parish at the California Company's Joe Pasternock 1, 4018 feet east of NEc Sec. 46 but in 27-9n-10e. The well flowed 235 barrels of 59-gravity distillate per day, along with 3,000,000 feet of gas. Forty perforations were made opposite the Eutaw zone from 8390-8402 feet. The well went to 9210 feet, and cemented 7-inch casing at 9207 feet. Although commercial production has been established, operators plan to complete the well from the Massive sand section at 9130-75 feet, where tests have indicated production.

Webster Parish: The Carter Oil Company's N. P. Davis 1, wildcat gas discovery, C NE NE section 33-18n-8w, was acidized with 4000 gallons through 330 perforations at 5464-5520 feet. The well cleaned itself and flowed an estimated 5,330,000 feet of gas daily through a ¼-inch bottom-hole choke and ⅜-inch top-hole choke, also indicating a small amount of distillate. The well previously gauged 2,100,000 feet of gas and no distillate in 24 hours. Total depth is 7600 feet. A string of 5½-inch casing was set at 5724 feet, when no shows of possible production were found lower.

Phillips Petroleum Company is rigging up for Docia 1, NE NW 18-22n-9w, proposed 8500-foot wildcat test in northwestern Louisiana.

Concordia Parish: Two tests made locations in the Lake St. John field. California Company's Applegate 7, 3222 feet west of NEc sec. 15 but in 14-9n-10e, will seek Travis Peak production to 13,000 feet, the deepest well to be drilled in this sector.

Claiborne Parish: Gulf Refining Corporation-Houston Oil Company abandoned Muslow Oil Company 1, 31-21n-7w, test in the Homer field, at 6884 feet. Drill stem test of perforations at 4915-20 feet recovered salt water and some drilling mud.

Bossier Parish: Barnsdall Oil Company is drilling below 8700 feet in shale in the Cotton Valley horizon at J. T. Hanks 1, wildcat NW SE 7-20n-12w, 6 miles northeast of Benton. Top of Cotton Valley was found at 7554 feet. No oil shows have appeared.

Red River Parish: The Texas Company's Semp Russ 1, 16-12n-10w, Bull Bayou area, is drilling below 4250 feet in lime and shale, believed still in Glenrose which was topped at 4020 feet. Gas was logged above 4171 feet and the well threatened to blow. More mud was added and drilling continued.

Grant Parish: Caliper Manufacturing Company will begin operations at Edenborn Estate 1, section 20-7n-3w, a proposed 4000-foot wildcat, 3 miles north of Colfax in the western portion of the parish.

Magnesium Possible from Brine in Oklahoma Wells

Laboratory tests of brines from Oklahoma wells conducted by A. L. Burwell, chemical engineer at the University of Oklahoma, reveal that the salt water is suitable for the extraction of magnesium in the same manner that this metal is now being extracted from sea water.

A greater recovery of magnesium may result by use of Oklahoma calcined dolomite instead of lime in the process. By using dolomite, not only would the magnesium of the brine replace the calcium in the dolomite, but at the same time it would free the magnesium in the dolomite, thus doubling the magnesium recovery in the form of magnesium hydroxide, Burwell declared.

☆

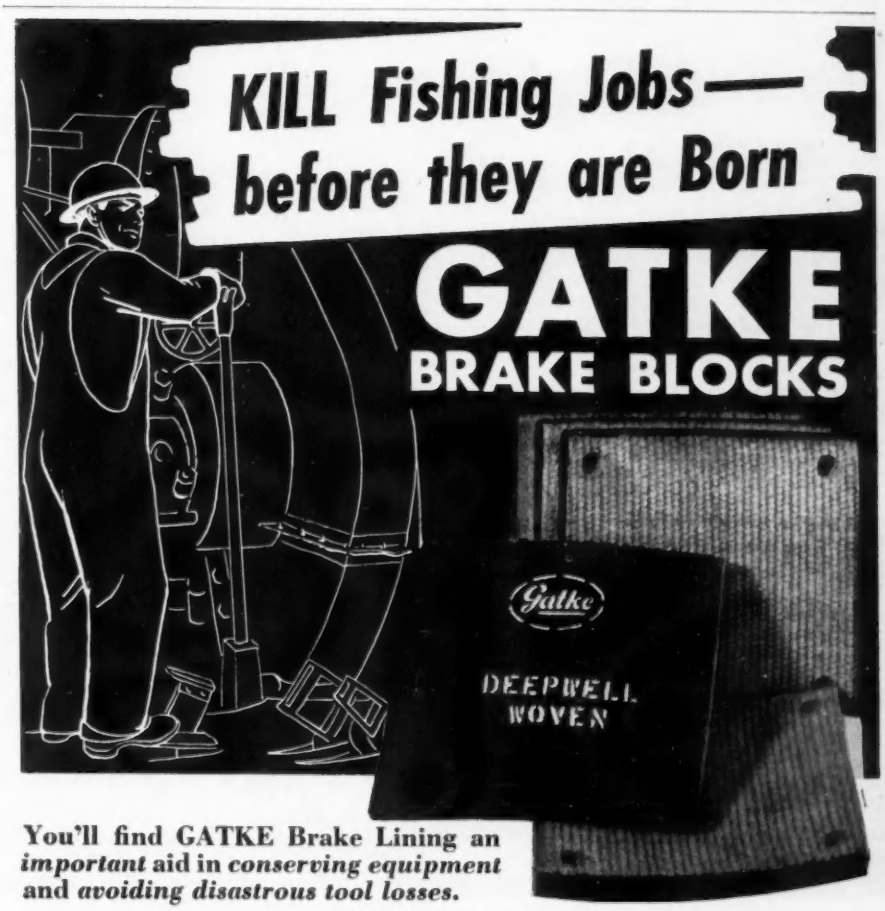
DREW L. HINES and H. S. Chase have been elected vice presidents, and Richmond K. Kelly, assistant vice president, of Tide Water Associated Oil Company.

Arkansas

Miller County Test Alters Picture in Fouke Field

Grady H. Vaughn's wildcat in Ouachita County, J. F. Haltom 1, NE NE SE 28-15s-18w, ran casing to test Travis Peak sand at 3670 feet. The well topped Smackover lime at 6133 feet, but was too low on structure to produce.

Miller County: Carter Oil Company's R. J. O'Brien 1, SW NW 33-16s-26w, Fouke field, is awaiting pumping unit before taking potential after perforating at 3568-77 feet in the first Sturgis sand. Structure revealed in drilling has re-



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vised previous pictures of the northeast sector of the field. The well, which according to a pattern determined by other producers in the field should have crossed the fault at 3000 feet, drilled the fault at approximately 2245 feet. This indicates the fault has turned rather sharply, and opens up the possibility of wider producing area.

Union County: R. H. Crow's location for Randolph Smith 1, NE NE NE 26-18s-15w, has been abandoned because of high water in the area. It is near Root 1, C NE NE 25-18s-15w, "abandoned" well, which revised estimates gauge as pumping off 5 to 10 barrels of oil daily. Location may be made for a new well in the area about ½ miles south of Smith 1.

Pope County: Stanolind Oil & Gas Company is drilling below 4000 feet in G. B. Maxwell 1, C SE SE 18-8n-18w.

Columbia County: Magnolia Petroleum Company completed H. Rogers 1, C SW SE 14-17s-19w, in the Village field, for 190 barrels of oil, and no water, gas-oil ratio 1520/1; tubing pressure 1300 pounds. Production is from Smackover lime at 7357-59 feet, total depth, with production string cemented on top of pay.

☆

W. M. STIRTZ, formerly development geologist with Cities Service Oil Company, Bartlesville, Oklahoma, has joined the geological staff of the Kerlyn Oil Company at Oklahoma City.

☆

W. C. BEAN, division geologist for Shell Oil Company at Wichita Falls, will be transferred to Tulsa September 1 and will be succeeded by George Hardison, his assistant.

Southeastern

Lamar County May Have New Gas-Distillate Field

Gulf Refining Company's C. V. Cooper 1 indicated good possibilities of a new gas-distillate field in Lamar County, Mississippi, when it cored sand with oil and gas odors in the Eutaw at 7736-86 feet. A drill-stem test, open 6 minutes with ⅜-inch bottom and ¼-inch top chokes, showed a blow of gas at surface and recovered part of the water cushion. At the time the tool was closed it was showing working pressure of 800 pounds and still rising. Recovery, in addition to water cushion, was 360 feet of drilling mud with a rainbow showing of oil and no formation water.

In 14-2n-16w, 6 miles northeast of the Gulf wildcat, Shell Oil Company is drilling below 2300 feet in Hibernia Bank & Trust Company 1, only other wildcat active in Lamar County.

Adams County: Humble Oil & Refining Company's Ida Stowers A-1, in 9-8n-2w is drilling at 9094 feet in shale with no showings reported in the lower formations. It found the sand at 5600 feet which had caused trouble in the original hole.

The Pure Oil Company's McDowell 2, in 1 2-6n-3w, has set 5-inch liner to total depth of 10,333 feet and was running gamma ray test this week to check the hole. It will perforate in the section from 10,305-328 feet for the first production test, with next test scheduled for about 10,20-7293 feet, just above the original casing seat at 10,290 feet. After drilling plugs from the casing and deepening to 10,293 feet, a test in open hole had shown gas at the rate of 3,000,000 cubic feet daily, along with 24 barrels of distillate and a little salt water.

Claiborne County: Sun Oil Company's A-1 Hammett, 2-11n-1w, has completed the big substructure to allow installation of blowout preventer, and is now rigging up rotary tools to commence drilling. This is a twin well to the Hammett 1 which recently blew out after reaching a depth of 1800 feet, indicating opening of a shallow gas reserve.

Jefferson Davis County: Gulf Refining Company is drilling below 3200 feet in shale in its D. L. Mullins 1, wildcat 2½ miles southwest of Sid Richardson's new Gwinville discovery.

Sinclair-Wyoming Oil Company is preparing to abandon its Newman Lumber Company 2 southern Jefferson Davis County, after drilling to 11,664 feet in shale with no showing reported. Top of the Massive Tuscaloosa was picked at 9940 feet by electric log.

Florida

Humble Oil & Refining Company is drilling slowly in lime formation in Florida's deepest test, Gulf Coast Realties 2, C SW SE 30-48s-30e, Collier County. It has encountered no commercial shows. The company's State 1, C NE NW 30-55s-36e, Dade County, is still fishing for tools at 6284 feet. Humble has announced location for Gulf Coast Realties 4, 20-48s-30e, Sunniland area, Collier County.

The Pure Oil Company's C. C. Hopkins, C SW SE 21-6s-9e, Gulf County,

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is awaiting cement after setting 10¾-inch surface casing at 2346 feet.

Stanolind Oil & Gas Company's St. Joe Paper Company 1, C NE NE 15-2s-2e, was abandoned at 489 feet.

Florida Oil & Refining Company's Everglades 1, 31-53s-35e, was shut down at 10,201 feet. Norstaff was logged at 8368 feet.

Alabama

Humble Oil & Refining Company's J. R. Williams B-1, C SW NW 20-6n-4w, Washington County, Alabama, was drilling in shale and chalk at 4971 feet.

The Texas Company is moving for a second wildcat, N. S. Stallworth 1, C SW NW 10-3n-3w; and A. C. Derr, Trustee, is preparing to spud Hobson 1, C SW NE 9-8n-2w.

Escambia County: Hunt Oil Company's Harry B. Jones 1, C SE SE 3-1n-11e, is awaiting cement after setting 10-inch casing at 990 feet.

Clarke County: Plains Production Company, Jack Bunte et al, have a tentative location for a 6000-foot test in C NE NW 30-9n-3e, Clarke County.

Lauderdale County: J. L. James' Jeanette Simpson 1, NE SE NW 33-1s-10w, is shut down at 500 feet.

Georgia

Hunt Oil Company was drilling in shale below 1140 feet in Superior Pine Products Company 1, Land Lot 363, Land District 13, proposed 9500-foot deep wildcat in Echols County, Georgia.

The California Company was ready to spud Brunswick Peninsula 1, Land Lot 7, Wayne County.

Rocky Mountain Area

10,000-Foot Test Planned In Southwest Wyoming

Mountain Fuel Supply Company will drill a 10,000-foot test on its Church Buttes structure, Uinta County, southwestern Wyoming. Church Buttes, 60 miles west of the Baxter Basin gas fields, is near the center of an area covered with Tertiary beds. It is expected that 6000 or 7000 feet of these beds will be drilled and the principal objective reached between 10,000 and 11,000 feet. The Church Buttes block is unitized and its initial test will be in 8-16n-112w. Contract has been let to Manning & Brown of Denver.

Bailey Dome: Sinclair-Wyoming Oil Company is rigging up for a Tensleep test on Bailey dome, SE NE NE 21-26n-89w, Carbon County, Wyoming. Bailey dome is west of Mahoney and south of Wertz fields.

Kirby Creek: Pacific Western et al, Government 1, SE NE NE 21-43n-92w, Kirby Creek, Hot Springs County, Wyoming, drilled into the Embar lime at 3418 feet and recovered 10 feet of saturated lime in a core taken at 3454-3464 feet. A drill-stem test of the upper Embar at 3418-3454 feet, open 2½ hours, showed only mud. The well is coring in lime at 3467 feet.

Red Canyon: Bell Oil Company has spudded a wildcat in Red Desert Canyon, Fall River County, South Dakota, NW NW SE 8-8s-3e and will test the Minnelusa formation at approximately 2000 feet. A well to the south in Section 17 in 1925 was abandoned at 2089 feet. Bell Oil Company's acreage in Red Canyon comprises 8500 acres centering around its well location.

Sand Creek: Amerada Corporation's Rohrbacher 1, C SE SW 32-11n-68w, wildcat on Sand Creek in Larimer County, Colorado, found the Dakota dry and abandoned at total depth of 6956 feet. Top of the Dakota was reached at 6846 feet. The Clarks Lake field, to the south, produces oil from the Muddy sand. Rig will be moved to a location 12 miles northeast of Sand Creek for another wildcat.

Texas Well Permits

Permits to drill 155 new oil wells in Texas were issued by the Texas Railroad Commission last week. There were 35 in Southwest Texas, 33 in West Texas and 29 in North Texas.

The Gulf Coast reported 20 locations; there were 15 from the Panhandle, 14 from West Central Texas and nine from East Central Texas.

☆

WILLIAM H. ATKINSON, Oklahoma City consulting geologist, spoke on the "Geology of the West Edmond Field," Oklahoma, at the September meeting of the Shawnee, Oklahoma, Geological Society.

CHARLES E. HEYNS has been appointed PAW district director of distribution and marketing on the Pacific Coast, succeeding C. B. Garretson, who recently resigned.

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California

Field Opened in Edison Area of Kern County

An oil field was opened in the Edison area, Kern County, by British-American Oil Production Company and Capital Company with the completion of Portals 53, SW NE 3-30-29. On initial test it flowed 125 barrels per day of 37 gravity clean oil through ½-inch choke from perforations at 4733-70 feet from the Olcese Sand. The underlying untested Vedder Sand, if present, may be more prolific. Five new wildcats were started.

Fresno County: Tide Water Associated Oil Company is grading location for S.P. 82-15, a deep test wildcat NW NW 15-17-15, Cantua Creek Area. Ten wells have been abandoned in the immediate area, most of them logging shows.

Kern County: Standard Oil Company's K.C.L. 11-14 SE SE, 18-29-26, Eocene sand test of the Greely field, was wet on a swab test and is trying to locate source of water.

Reserve Oil and Gas Company's 33-7, SE NW 33, 11n-19w, in the Tejon Area, blew out while testing the shoe of the 7-inch casing cemented at 2610 feet and was blowing wild an unestimated amount of gas with no oil. Gas sand was logged from 2610-2645 feet and oil sand from 2645-2705 feet. Other wells in the immediate area after blowing off the gas cap failed to become commercial producers.

Los Angeles County: Permission has been granted Gilco Inc. to use flood control property near Seal Beach for a rig site to test the off-shore structure. Gilco's No. 1 drilled to 7025 feet, developed a fishing job and was abandoned. The present surface location is 2000 feet nearer shoreline, lessening the off-vertical drilling angle necessary in 1.

Union Oil Company's Howard and Smith 3, deep test of the Montebello field, drilled to 10,722 feet, failed to uncover showings in the lower part of the hole, and is plugging back and testing intermediate shows. Salt water was recovered from the perforated interval at 6758-6845 feet.

A.G.A. Election Planned October 5 in New York

Election of officers will be one of the highlights of the annual meeting of the American Gas Association October 5 in the Engineering Societies Building, 29 West 39th Street, New York.

Also on the agenda are the election of the natural gas department managing committee, election of manufactured gas department managing committee, award of the American Gas Association Meritorous Service Medal, a message from the WPB by Edward Falck, director of the Office of War Utilities, and "An Industry Program in Research, Advertising and Promotion" by Ernest R. Acker, president of A.G.A. and chairman of the Committee on Gas Industry Promotional Development.

Plans for an expanded program of gas utility industry research, national advertising and general promotion costing $1,400,000 a year for three years were approved by the executive board recently.

Michigan

Seismograph-Located Wells Are Potential Discoveries

Wildcats located by seismograph surveys in 2 counties of northeastern Michigan are potential pool discoveries and may lead to extended local application of geophysical methods. Although a number of geophysical parties have worked areas of Michigan for 10 years, no discovery has been credited to that method of survey.

Shell Oil Company, Inc., after withdrawing from the state in 1938, sent a seismograph party into Northeastern Michigan 2 years ago and on the strength of its findings leased 4 big blocks. Shell's Koth 1, SW NE NW 2-16n-4e, 10 miles north of the Kawkawlin field, Bay County, logged Dundee lime at 2823 feet and on a drill stem test at 2911-27 feet showed 125 feet of oil and 160 feet of gas-cut mud. Another drill stem test at 2942 feet showed salt water and the wildcat is being drilled under its original 4500-foot program. If the well produces commercially in the Dundee it will become the first seismograph pool discovery in the state.

Shell's Woidan 1, NW NW NW 16-13n-11e, Novesta Township, Tuscola County, is awaiting orders at 3875 feet. Wildcat logged Traverse at 1882 feet, Dundee at 2508 feet and Monroe at 2868 feet. Tests with cores and drill stem showed pays at 2892 and 3464 feet. These horizons are productive in the Akron pool in Tuscola County.

Sylvania sand, one of the principal objectives of the wildcat, topped at 3762 feet, failed to show.

Bay County: Gulf Oil Corporation has abandoned Salina 1, SE SE SE 34-15n-4e, Kawkawlin field, Bay County, as a failure for gas in the Salina formation between 7596 and 7951 feet. It was the first deep test drilled in the field since completion in 1941 by Gulf of the Bateson 1.

WESTERN CANADA

Devonian Discovery to Be Held Back for Long Period

Standard Oil Company of California's Devonian limestone discovery well, Princess-C.P.R. 8, was kicked off September 16 and is flowing steadily under its own power through 1/16th-inch choke, clearing drill fluid together with some new oil. Wary of reservoir conditions, as yet undetermined, Standard will operate for an extended period at a restricted rate, probably under 200 barrels daily. Bottom is at 3985 feet, with oil saturation from 3965 feet. The well, in the Princess area 100 miles east of Calgary on the South Alberta Plains, flowed at 45 barrels hourly with gas flow just over 600,000 feet daily in brief drill-stem test before casing was set to the top of the zone. The oil is 35 gravity. There has been no evidence of formation water.

Peerless Syndicate, organized by a group of Independent Alberta oil operators, has started work on a new venture 4 miles southeast of Standard Princess 8. The new well, Peerless 1, is starting immediately in Lsd 4 18-20-11w4th, ¾ mile east of Standard's Princess 2 well, a 1940 completion which produced 24,000 barrels of oil from the Sunburst sand before abandoning due to water influx. The Peerless well will go to the Sunburst (around 3200 feet).

Following up recent oil and gas strikes on the South Alberta Plains, Standard of California has started work on 2 wildcats. One, Chin-Province 2, is being drilled in Lsd 8 36-8-18w4th, 3 miles southwest of Major-Taber 1, the West Taber area discovery well.

The second new venture, Conrad-Province 77-33B, is starting in Lsd 13 33-5-15w4th, ⅜ mile southeast of the Conrad-Province 2 discovery well, now pumping 120-125 barrels daily of 25.6 gravity oil from the Ellis sand.

Elected by Controllers

Members from the petroleum industry elected by the Controllers Institute of America are John McFarland, manager of the tax department of the Sun Oil Company, Philadelphia; William H. Garbade, assistant treasurer of Shell Oil Company, Inc., New York, New York; and William A. Jackson, assistant comptroller of Standard Oil Company of New Jersey, New York, New York.

☆

WARREN GRAY, formerly in the geological department of Gulf Refining Company has joined National Associated Petroleum Company at Mt. Vernon, Illinois.

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U. S. Exploratory Completions

ALABAMA WILDCATS

Bullock County—Failure: T. M. McLendon's J. L. Harris 1, c sw sw 18-12-22e, abnd 1140 ft.

Choctaw County—Oil Discovery: H. L. Hunt's W. S. Scruggs 1, c se ne 32-11n-4w, pump 50 bbls 19-gr oil, 3 bbls salt wtr, td 3832 ft, pb 3501 ft.

Escambia County—Failures: Hunt Oil Co.'s Foshee & Miller 1, 498 fr nl 1816 fr el 15-1n-10e, abnd 5901 ft.

Humble's Skinner 1, c se nw 10-3n-10e, elev 268 ft, salt wtr, no show oil, abnd sandy shale 11,100 ft.

CALIFORNIA WILDCATS

Fresno County—Failure: Seaboard Oil Co.'s Seaboard-Pure 64-22, Ciervo anticline, 22-16-13, ss gas & wtr, abnd 7016 ft.

Los Angeles County — Failure: Hathaway Co.'s Rossi 1, 22-2-12, abnd 7830 ft.

CALIFORNIA OUTPOST

Kern County—Failure: Standard Oil Co.'s Robbins Comm. 45-35, 35-29-26, edge well in Bellevue area, no sands in Stevens zone, abnd 8600 ft.

GEORGIA WILDCAT

Decatur County—Failure: H. L. Hunt's Metcalf 1, c ne¼ ld lot 260 ld dist 21, abnd 6152 ft.

ILLINOIS WILDCATS

Perry County—Failure: Texas Co.'s Marlow 1, sw sw sw 10-5s-2w, abnd 1690 ft.

Wayne County—Failure: Homer Luttrell et al's Feterling 1, ne se nw 21-1s-9e, abnd 3420 ft.

White County—Failure: Cochran, Hutchens & Kingwood Oil's Powell Hrs 1, se ne nw 36-6s-8e, abnd 3167 ft.

INDIANA WILDCATS

Adams County—Failure: Redwine & Boyce's Gahman 1, sw se sw 8-27n-13e, abnd 1150 ft.

Jay County—Failure: Farm Bureau's Binegar 2, ne ne nw 29-24n-13e, abnd 3318 ft (wo).

Miami County—Failure: M. C. Fletcher's Notre Dame Univ. 1, sw sw 20-38n-3e, abnd 1045 ft.

KANSAS WILDCATS

Barton County—Failures: Coralena's Funk 1, ne ne nw 18-16s-15w, Lans 3221 ft, abnd 3408 ft.

Coralena's Brack 1, sec nw 31-16s-15w, Lans 3270 ft, abnd 3491 ft.

Butler County—Failure: Texas Co.'s Bales 1, nec 30-27s-3e, KC 2415 ft, Miss 2870 ft, Simp 3148 ft, Arb 3228 ft, abnd 3280 ft.

Ellis County—Failure: Jones et al's Edwards 1, ne sw 33-15s-20w, Lans 3604 ft, abnd 3931 ft.

Norton County—Failure: Allen et al's Cornstock 1, swc 3-4s-23w, Lans 3582 ft, Arb 3842 ft, abnd 3871 ft.

Pratt County—Oil Discovery: Skelly's Shaw 1, nwc 4-29s-13w, pump 142 bbls, Simp 4489-95 ft, td 4587 ft.

Stafford County—Failure: Amerada's Alpers 1, nwc ne 25-21s-13w, Arb 3659 ft, abnd 3695 ft.

KENTUCKY WILDCATS

Caldwell County—Failure: Sohio et al's Vinson 1, 16-J-20, abnd 1280 ft.

Webster County—Failure: Ohio's Baker Est. 1, 3-M-23, abnd 2075 ft.

NORTH LOUISIANA WILDCAT

Caldwell Parish—Failure: Atlantic's Louisiana Central Lumber Co. 1, 660 fr nl 2001 fr wl 6-13n-2e, elev 201 ft, Wilcox 1341 ft, U Cretaceous 3200 ft, Base chalk 3684 ft, Tuscaloosa 4420 ft, salt 4965 ft, sw, abnd in salt 6275 ft.

SOUTH LOUISIANA WILDCAT

Tangipahoa Parish—Failure: Humble's Williams, Inc. 1, start nec se¼ sect 31 go 661 wly alg nl se¼ th sly 662 parallel to el of sect 31-7s-8e, abnd 9229 ft in shale and sand.

MICHIGAN WILDCATS

Allegan County — Failure: Oil Producers' Wamhoff 1, sw sw se 17-3n-12w, abnd 1597 ft.

Bay County—Failure: Atha and Rose's Plant 1, se se se 9-14n-3e, Dundee 3506 ft, abnd 3790 ft.

Lapeer County—Failure: Mammoth's Harland 1, w½ sw nw 21-10n-10e, abnd 3315 ft.

Mecosta County—Failure: W. C. Taggart's Fee 1, w½ se sw 11-15n-10w, Stray sand 1091 ft, gas 1095-1118 ft, Traverse 2808 ft, Dundee 3333 ft, Monroe 3406 ft, abnd 3461 ft.

MISSISSIPPI WILDCATS

Issaquena County—Failure: Sun's Haynes-Johnson 1, c se se 1-9n-8w, elev 103 ft, Sand ssg 4203-08 ft, abnd shale and lime 4620 ft.

Yazoo County—Failure: Sinclair Wyoming's Betty Deason 1, c sw se 25-12n-2e, elev 221 ft, Eutaw 4850 ft, Tuscaloosa 5408 ft, abnd 5612 ft.

OKLAHOMA WILDCATS

Creek County — Oil Discoveries: Nadel & Gussman's Sandlin 1, se se nw 6-14n-8e, pump 25 bbls 47-gr, perf 60 shots 2450-69 ft, td 3922 ft.

Jackson's Smith 1, pump 5 bbls, perf 100 shots 2760-83 ft, td 3082 ft.

Buckles' Conner 1, sw se ne 17-18n-10e, flow 25 bbls 29-gr oil, 2 mln gas 2730-55 ft, td 2755 ft.

Creek County—Failures: Wilcox Oil Co.'s Watson 1, sw sw se 27-15n-7e, Osw 2593 ft, Prue 2696 ft, Bart 3077 ft, Ls 3237 ft, abnd 3265 ft.

Cotton's Lindsey 1, se se se 33-15n-7e, del 4153 ft, abnd 4220 ft.

Jefferson County—Failure: Magnolia's State 1, sw ne nw 6-7s-8e, abnd 5308 ft.

Tillman County—Failure: Halas Pet.'s Carlisle 1, sw nw sw 7-1s-19w, abnd 2110 ft.

SOUTH CENTRAL TEXAS WILDCATS

Bastrop County—Failure Sohio's R. H. Andrews 1, 330 fr ne&sel w¼ sect 12, Kerr sur A-221, td 1st hole 1176 ft, pb, st and abnd 3540 ft.

Zavala County—Failure: Texas Co.'s C. Van Cleve 1, 466 fr el 466 fr sl 1804-ac lse GC&SF sur sect 11, abnd 2370 ft.

LOWER TEXAS COAST WILDCATS

Nueces County—Failure: Cities Service's H. J. Mattiza 1, 467 s&e of nwc e¼ sect 32 175-ac lse, G. H. Paul subdvn Driscoll Rch, elev est 32 ft, abnd 8000 ft.

San Patricio County—Failure: Rogers Bros. Dr. Co.'s T. A. McKamey 1, 5700 s th 2475 e fr sec Presido Irr. Co. sur A-317, elev est 5 ft, sw 6494-6500, 5800-95 ft, abnd 7200 ft.

Victoria County—Failures: Northern Ordnance's H. M. Rushhaupt 1, 660 fr el 2460 fr nl 343-ac lse, 6000 fr swl 2600 fr nwl Eben Haben sur, abnd 9242 ft.

Sinclair Prairie's M. E. McCampbell 1, 3500 fr nel 2640 fr sel 1722-ac lse, A. Nelson Gr A-63 and O'Connor & Allen sur A-505, abnd 8012 ft.

TEXAS GULF COAST WILDCATS

Brazoria County—Failure: H. C. Cockburn-Salt Dome Oil Corp.'s H. W. Lyman et al Unit 1, 330 fr s&wl blk 10 and sect 78 40-ac unit, J. S. Talmadge sur A-563, abnd 6500 ft.

Brazos County—Failure: Hamman O&R Co.'s M. W. Sims 1, 660 fr sw&sel 328-ac lse 660 nw of sel Alex de la Garza sur, 12 mi w of Bryan, elev 242 ft, Sparta 1132 ft, Wilcox 2090 ft, fault 2200 ft, abnd 5717 ft in shale.

Colorado County—Failure: Sinclair Prairie's W. H. Kollman 1, 2095 fr wl 352 fr nl 109-ac lse 1½ mi se Frelsburg, P. Piper sur A-447, on New Ulm blk, abnd 10,761 ft.

Harris County—Failure: Tide Water's Houston Deepwater Land Co. 1, 8514 ft fr sl 2600 fr el 3012.9-ac lse, Thomas Erle sur A-18, 4 mi e of Pasadena, Deepwater area, abnd 7490 ft.

Matagorda County—Failure: United North & South Dev. Co.'s Buckner Orphans Home 1, 660 e of e bank of old channel Colorado River,

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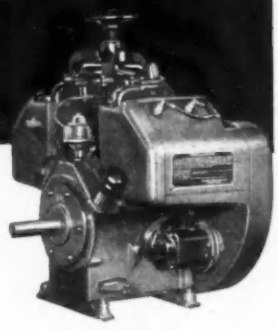

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1	Motor, Allis Chalmers, 50 H.P. with Slide Rails.
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2	Motors, Westinghouse, 35-15 H.P., 440-V, 60 cycle, 3 Phase, 49/25 Amp., Induction.
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■ Representative Wanted — Drop Forging manufacturer particularly well situated and equipped to serve oil industry wants capable sales engineer representative in Texas and Louisiana. Address: Box 10, c/o The Oil Weekly, Houston, Texas.

■ Petroleum or Mechanical Engineer with several years field experience in well completion and production preferably in the Gulf Coast area to promote sales of technical oil field services and equipment. Permanent position with good future for man with imagination, intiative, and genuine interest in sales engineering. Give full details of education, experience, and availability in first letter. All replies held confidential. Box 1, c/o The Oil Weekly, Houston, Texas.

■ WANTED: Drilling Engineer for foreign service with major oil company. Mechanical or petroleum engineering background plus experience and familiarity with drilling operations. Address: Box 5, c/o The Oil Weekly, Houston, Texas.

BUSINESS OPPORTUNITIES

■ CAPITAL SEEKERS: Interested in raising $25,000 or more should write to Amster Leonard, Fox Bldg., Detroit 1, Michigan.

NOTICES

■ GEORGIA OIL REPORTS: 6 mo. sub. $6. Get posted. Keep posted. Also Base and County maps So. Ga. and North Fla. C. W. Deming, Waycross, Ga.

ADVERTISING RATES

TRADING POST SECTION

Regular classified advertisements for this special section, set in type this size without border, take flat-rate of 7 cents per word for the first insertion and 5 cents per word for each subsequent insertion of same copy. Display advertisements for this section, set in suitably larger type with ruled border, are $5.00 per inch for the first insertion and $4.00 per inch for subsequent insertions. Remittance must accompany copy which should be sent to:

Trading Post Section, The Oil Weekly
P. O. Box 2608 — Houston 1, Texas

660 fr nl 570 fr el 40-ac unit, A. J. Smalley Lge, abnd 8513 ft in shale.

NORTH TEXAS WILDCATS

Archer County—Discovery: Maguire Industries et al's W. R. Hammond 1-A, H. Corzine sur A-56, lot 6, pump 81 bbls oil, 30 bbls wtr, perf 4173-4185 ft, 35 shots, dolomite, td 5891 ft.

Archer County—Failures: D. H. Bilin et al's Bill Threet 1-A, Jefferson CSL sur A-240, blk 105, dry and abnd 1138½ ft.

Consolidated Oil-Premier Ref. Co.'s J. L. Prideaux 1-D, dry and abnd 3794 ft.

Cook County—Failure: Humble's Anton Felderhoff 1, John Barnett sur, A-42, lot 3, abnd 2035 ft.

Wilbarger County—Failure: R. W. Bourland's Sylvia Bell Lundy 1, H&TC sur, sec 69, blk 12, abnd 2884 ft.

Young County—Failure: Panhandle Refining Co.'s Millie Elkins 2, W. H. Elkins sur abst 1957, abnd 2332 ft.

WEST TEXAS WILDCAT

Pecos County—Failure: Robert M. Turpin's H. J. Eaton 1, sect 23, blk 3, H&TC sur, abnd 1902 ft.

WEST CENTRAL TEXAS WILDCATS

Jones County—Failure: Con-Tex Pet. Corp.'s E. E. Radford 1, sect 37, blk 16, T&P RR sur, abnd 2050 ft.

Stephens County—Failure: W. F. Lacey et al's B. J. Poe 1, abnd 1798 ft.

Taylor County—Failures: Eltex Ltd.'s W. M. Mayes 1, subdvn 16, Grimes CSL 124, abnd 2910 ft.

West Central Dr. Co.'s Jessie Brown et al 1, sect 34, T&P RR sur, blk 17, abnd 2520 ft.

WESTERN CANADA WILDCATS

Southern Alberta Plains—West Taber Oil Discoveries: Major Oil Ltd.'s Major-Taber 1, lsd 12 9-9-17w4th, flow 35 bbls 23-gr oil, 40,000/1, td 3258 ft.

Major Oil Ltd.'s Major-Taber 3, lsd 14 9-9-17w4th, completed 3245 ft; flow 60 bbls 23-gr, td 3245 ft.

Conrad: California-Standard's Conrad- Province 55-5-A, lsd 11 5-6-15w4th, wtr in Madison lime, abnd 3138 ft.

United States Wildcat Starts

ALABAMA

Lauderdale County: J. L. James' Jeanette Simpson 1, c ne se nw 33-1s-10w, spud and sd.

Washington County: Texas Co.'s N. S. Stallworth & Co. 1, 120 w of c sw nw 10-3n-10w, prep to move in.

A. C. Derr, Tr.'s Hobson 1, c sw ne 9-8n-2w, clearing lcn.

CALIFORNIA

Fresno County: General Pet. Corp.'s Burrel 8-26, sw sw 26-16-18, Burrell area, lcn.

Tide Water's S. P. 82-15, ne ne 15-17-15, Cantua Creek area, lcn.

Shell's Edison-Securities 25, nw sw 22-13-16, Herminghaus area, lcn.

Kern County: Western Gulf Oil Co.'s Cohn 1, se se 3-30-28, Mountain View area, lcn.

San Bernardino County: Lee Salter 1, ne ne 34-4-5, Hesperia area, dr.

FLORIDA

Collier County: Humble's Gulf Coast Realties 4, 1996 fr nl 2054 fr el 20-48s-30e, lcn.

GEORGIA

Wayne County: California Co.'s Brunswicke Peninsula 1, 625 fr sl 2054 fr wl ld lot 7, prep to mi.

ILLINOIS

Franklin County: Aetna Oil's U. S. Coal & Coke 2, sw sw ne 29-6s-4e, dr 227 ft.

Jefferson County: Magnolia's Szramkowski 1, nw nw se 15-3s-1e, lcn.

Wabash County: Anderson et al's Couch 1, sw nw se 2-1n-13w, dr.

Wayne County: Pure's Jones 1, sw sw se 24-1n-8e, lcn.

INDIANA

Gibson County: White Eagle Oil's Deep Vein Coal Co. 1, sw nw se 25-1s-12w, dr.

Perry County: Larkin's Graves 1, ne ne sw 17-5s-2w, lcn.

Posey County: Cokes' Murphey et al 1, se sw se 7-4s-13w, dr 177 ft.

Spencer County: Texas Co.'s Schaus 1, nw nw ne 36-4s-5w, lcn.

Warrick County: Cherry & Kidd's Bondholders et al 1, sw se sw 8-5s-7w, lcn.

KANSAS

Cowley County: Texas Co.'s Graham 1, ne se se 7-32s-4e, rur.

Texas Co.'s Wahlenmaier 1, ne ne nw 13-34s-4e, pits.

Ellis County: Sunray's Younger 1-B, sw ne ne 6-14s-17w, mirt.

Sunray's Hauschild 1, nwc sw 17-15s-19w, lcn.

Graham County: Skelly's Davis 1, nwc 15-7s-22w, lcn.

Phillips' Chad 1, sw sw nw 2-9s-22w, lcn.

Norton County: Allen et al's Fed. Land Bank 1, ne ne sw 33-3s-22w, lcn.

Russell County: Phil-Han's Meir 1, nwc 30-15s-12w, dr 200 ft.

Sedgwick County: Beech Aircraft's Cox 1, nw se sw 36-28s-2e, dk.

Stafford County: Plains Exploration's Brinkman 1, nwc ne 24-23s-12w, dr 374 ft.

Sumner County: Bogan's Jordan 1, ne ne sw 34-31s-3w, lcn.

KENTUCKY

Daviess County: Ellis' Keene Est. 1, 17-Q-27, lcn.

Henderson County: Ohio's Dossett 1, 5-P-22, lcn.

McLean County: Sohio's Walker 1, 5-N-25, dr 268 ft.

Ohio County: Sohio's Duke 1, 15-M-33, lcn.

Union County: Cook et al's Proctor 1, 4-P-20, lcn.

NORTH LOUISIANA

Caddo Parish: J. A. Economo's Glassell-North 1, 990 s 1883 e of nwc 26-20n-15w, lcn.

Concordia Parish: California Co.'s Applegate 7, 2134 n 3222 w of nec of sect 15 in 14-9n-10e, lcn 13,000-ft test.

Franklin Parish: C. L. Smith's J. B. Eby 1, c se se 25-13n-7e, lcn 7100-ft test.

SOUTH LOUISIANA

Iberia Parish: Shell's Smith-State Lse 500-1, n 89° 51 mins 2 1925 alg nl sect 13 fr nec th s 00° 09 mins w 1439 in 13-14s-6e, lcn Weeks Island area, 12,000-ft test.

MICHIGAN

Lake County: Rowmor and Americrude's Lucius 1, nw nw nw 22-19n-11w, lcn.

Missaukee County: Pure's Dorland 1, n½ se nw 9-21n-7w, rig.

MISSISSIPPI

Claiborne County: Sohio's Georgiana Mackey 1, begin se sect 4 go nw 660 th 43° 30 e 860 to 4-10n-3e, lcn.

Scott County: Sinclair Wyoming's Robert Kirch 1, c se se 26-6n-6e, lcn.

Wayne County: Southport Petroleum Co.'s W. W. Evans 1, c ne ne 3-8n-6w, building dk.

NEW MEXICO

Santa Fe County: P. B. English et al's Fullerton & Dodson 1, 265 ft fr sl 3460 ft fr wl 16-12n-10e, State of New Mexico map, lcn.

OKLAHOMA

Cleveland County: Harp et al's Matthesen 1, ne nw ne 19-10n-2w, rur.

Comanche County: Morris' Norton 1, sw nw nw 35-2n-10w, rur.

Cotton County: Carter's Parish 1, c sw sw 1-2s-12w, lcn.

Garvin County: Fox et al's Butler 1, sw nw se 9-1n-1w, dr 200 ft.

Lincoln County: Kemp et al's Long 1, se nw 15-16n-5e, lcn.

McIntosh County: Phillips' Bogarth 1, ne ne nw 12-12n-15e, lcn.

Pottawatomie County: Ashland Refg.'s Stephens 1, ne ne sw 31-6n-5e, rur.

Texas Co.'s Case 1, sw ne nw 17-10n-5e, rig.

Seminole County: Deep Rock et al's Jackson Est. 1, nw ne nw 21-7n-7e, rig.

McIntyre et al's Cornelius 1, sw sw sw 18-11n-8e, dr 1587 ft.

WEST TEXAS

Andrews County: Phillips' Texas University 1-J, 658 ft fr nl 1980 ft fr wl sect 48, blk 9, University lands, lcn.

Crockett County: Sohio's J. S. Todd Estate 1-A-14, 663 ft fr sl 1812 ft fr el sect 14, blk YZ, EL & RR, lcn.

G. W. Smith's L. P. Cox Jr. 1, 990 ft fr nl 330 ft fr wl sect 26, blk 2, I&GN, lcn.

Howard County: R. A. Albaugh's Fee 1, sect 29, blk 32, T-2-N, lcn.

Midland County: Humble's O. P. Buchanan 1, 1980 ft fr nl 660 ft fr wl sect 32, W. M. Baldridge sur, lcn.

Pecos County: Magnolia's McAlpin-State 1, 660 ft fr s&el, sect 18, blk 140, T&St.L. RR sur, lcn.

WEST CENTRAL TEXAS

Brown County: Central Texas Gas Co. et al's B. Baxter 2, 3700 ft fr nwl & 900 ft fr nel D. Wofford sur 152, 1850-ft cable test.

J. D. Sandifer Jr.'s S. Y. Newson 1, 220 ft fr n&wl, G. R. Davis sur, cable tool test.

Eastland County: Sonarc-Texas Oil & Gas Co.'s E. A. Whiteside 1, 4024 ft fr nl 11 ft fr wl of 1656-ac E. A. Whiteside tr in Joseph Rubarth sur 100.

Shackelford County: Jones & Stasney et al's E. A. Shepperd 1, 1650 ft fr sl 1980 ft fr wl sect 18, Bayland Orphan Asylum sur, 1000-ft cable tool test.

E. H. R. Sabens' W. H. Green 1-C, 150 ft fr nl 1000 ft fr el sect 71, blk 12, T&P RR sur, 1200-ft cable tool test.

SOUTH CENTRAL TEXAS

Atascosa County: Gulf's Adam Tom 1, 660 fr sel 1980 fr nel John Benson sur 148 on 1515-ac lse, 12½ mi sw Hobson field, lcn 10,800-ft test.

Bexar County: George Lyles' Fee 1, 1450 e of Jungmann Road 1800 n of Medina River J. Martines sur 142 on 1117-ac lse, 600-ft cable tool test.

Caldwell County: Magnolia's Strawn 3, 1136 n&w of No 1 330 fr nel 990 fr nwl 672-ac lse, J. S. Montgomery sur, 330 s of Bastrop Co. line, lcn.

Guadalupe County: Wiegand Bros.' Paul & Emma Baumert 2, 330 e of wl 1000 s of No 1, 227-ac lse, M. Besore sur, lcn 2500-ft test.

Wilson County: Stanolind's J. E. Watkins 1, 467 fr se&swl Jas. Bradley sur 60-ac lse, lcn 5500-ft test.

Zavala County: Texas Co.'s National Bank of Commerce 1, 1980 fr wly nwl & sly nel E. A. Wolf sur A-1202 and 316-ac tr, lcn 7000-ft test.

SOUTHWEST TEXAS

Starr County: John F. Camp & Sons' Prudencia C. de Garcia 1, 330 fr n&el 80-ac lse, sh C-5, 7½ mi n of Roma, lcn 4500-ft test.

Webb County: Union Prod. Co.-Continental's O. W. Killam 1, 330 fr m/ely/el 330 fr m/nly/sl Rafael Sciaraffa sur A-1570, lcn.

LOWER TEXAS COAST

Brooks County: Humble's Dan Sullivan B-1, 12,540 e of wl 2030 n of sl of San Antonio del Ancino Gr, lcn 10,000-ft test.

Texas Co.'s Mary M. Lasater 2, 3300 fr nl 1980 fr sl 2600.8-ac lse, Francisco Guerra Chapa Gr, Burton & Danforth subdvn Parrita Rch sect 6, lcn 10,000-ft test.

Hidalgo County: Navarro Oil Co.'s Acredio Guerra Est. 1, 467 fr wl 1250-ac lse and San Salvador sur 467 fr n&wl sh 85, mim for 7500-ft test.

Lavaca County: McMurrey Ref. Co.'s Ila Ed Kelar 1, 523 fr nl 2218 fr sel 730-ac tr, M. Mouldon-sur, lcn 8500-ft test.

Live Oak County: Continental's Kittie W. Schreiner 1, 330 fr nel 330 fr nwl 80-ac lse, D. R. Fand & J. Poitevent sur, lcn 7500-ft test.

Refugio County: Sinclair Prairie's Robert L. Shaw 1, 330 fr el 2500 fr sl 761.9-ac lse, 2510 fr sl John Rainey sur 330 w of wl Evelyn Lynden land, lcn 8500-ft test.

TEXAS GULF COAST

Wharton County: General Crude's Security Bank & Trust Co. 2, 2725 fr nel 290 fr sel lot 7, blk 103, 300-ac lse, S. Castelman sur 5, lcn 5500-ft test.

Salt Dome Oil Corp.'s Joe Vitera 1, 1179 fr nl 340 fr wl Henry Mills sur A-270 and blk 1, lcn 6000-ft test.

EAST TEXAS BORDER COUNTIES

Angelina County: Humble's Angelina Lbr. Co. 1, 550 e 130 n of m/nly/nwc of W. H. Herring sur, 10 mi w and slightly n of Lufkin, lcn 10,000-ft test.

Panola County: L. C. Lucas- D. D. Cullins' G. T. Hudman 1, 5900 fr wl 5450 fr sl of Eliz. White sur, 660 fr nl 513 fr wl 50-ac tr, lcn.

San Augustine County: Gandy-Irwin's Annie Anderson 1, 1911 fr wl 672 fr wl B. W. Harvey sur, 3 mi se of Broadus, lcn.

Shelby County: Humble's Pickering Lbr. Co. 1, 800 fr nl 660 fr m/ely/el S. Francois sur A-207, on 414-ac tr, mim.

NORTH TEXAS

Clay County: Bridwell Oil Co.'s H. J. Ewers Jr. 1, 467 fr sl 467 fr el blk 1, sect 14, Clark & Plumb sur, 6000-ft rotary test.

WESTERN CANADA

Southern Alberta Plains—Princess: Peerless Syndicate's No. 1, lsd 4 18-20-11w4th, ru.

West Taber: California-Standard's Chin-Province 2, sw lsd 8 36-8-18w4th, ru.

Conrad: California-Standard's Conrad-Province 77-33B, se lsd 13 33-5-15w4th, ru.

Gas Hearing Set

A hearing to determine market demand for natural gas from the Hugoton gas field and to fix quotas for wells within the field for the proration period extending from October 1, 1944 to March 31, 1945, inclusive, will be held September 26, in Wichita, Kansas, by the Kansas Corporation Commission.

Stripper Wells Sold

The Quaker State Oil Corporation of Pennsylvania has acquired stripper well properties in Pennsylvania and New York owned by the Forest Oil Company of Bradford, Pennsylvania.

Squeaks from the Bull Wheel

Bad Guesser

Many a man has made a monkey of himself by reaching for the wrong limb.

Good Customer

Absent-minded sales girl as she kisses her boy friend good night: "Will that be all, sir?"

Nice Try

She: "Would you like to see where I was operated on for appendicitis?"
He: "No, I hate hospitals."

Bringing Up Mother

Mother: "I had a frank discussion with daughter today."
Dad: "Learn anything?"

"Halt! Who goes there—and how long can you stay?"

Definition

Intuition is that gift which enables a woman to arrive instantly at an infallible and irrevocable decision without the aid of reason, judgment, meditation or discussion.

Not So Smart

"They tell me you have a dog that can play checkers."
"Yep."
"Why man, do you know you've got there? You could go into the movies and clean up a fortune with a dog as smart as that."
"Humph. He ain't so smart. Last night I beat him three games straight."

The Long Way

"How far to the army camp?" asked the recruit.
"About five miles as the crow flies."
"And how far is it if the crow has to walk and carry 50 pounds of equipment on his back?"

Stick Around

"I'd like a couple of hard boiled eggs to take out."
"Okay," said the waitress, "but you'll have to wait. Mamie and me don't get off til 10."

GI Lament

"Sitting on my GI bed, my GI hat upon my head, my GI pants, my GI shoes, everything free, nothing to lose; GI razor, GI comb—but GI wish that I were home.
"They issue everything we need — paper to write on, books to read. They issue food to make us grow—but GI want a long furlough.
"Everything free, nothing to buy; your belt, your shirt, your GI tie. You eat your food from GI plate, and spend your funds at a GI rate. It's GI this, and GI that; GI haircut, GI hat. Everything is Government Issue—but GI sure would like to kiss you."

Crazy Fellows—

"What's the idea of sticking me in a ward with that crazy guy?"
"Well, the hospital is rather crowded just now. Is your roommate troublesome?"
"Why, he's nuts. He keeps looking around and saying, 'No lions, no tigers and no elephants'—and all the time the room is just full of them."

Race In Reverse

Three times he made his way to the ticket window to bet on Bluebells in the fourth race. On the fourth trip an observer tapped the bettor on the shoulder. "Brother," said he, "I wouldn't bet all that money on Bluebells. He won't win."
"Yeah?" said the other. "How'd you figure that?"
"Well, if you must know, I own Bluebells and I just know he won't win."
"Um-n," was the thoughtful response. "Well, all I can say is that it's going to be a mighty slow race; I own the other four horses."

★ ★ ★ ★ ★

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Notes for the Equipment Buyer and User

Improved Model Pipe Gauge

THREE-POINT GAGE COMPANY

Three-Point Gage Company, 3821 Broadway, Chicago 13, Illinois, announces a new model of the Three-Point gauge which will measure all sizes of pipe from ⅛-inch to 12 inches, and all sizes of electrical conduit and metallic or thin-wall tubing.

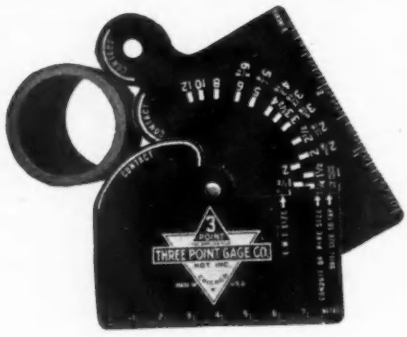
The gauge consists of two pivoted steel plates with edges curved at three points for contact with the pipe or tubing to be measured, together with scales which automatically register standard sizes of tubing or pipe in terms of inside measurement. A third scale shows the drill size for tapping. Also included is a handy inch rule and a metric rule.

By placing the two fixed contact points of one plate against the outer contour of the pipe or tubing and sliding the second or movable plate until it makes the third contact, the markers on the face of the gauge will show the size of the pipe, conduit or tubing and also the correct drill size for tapping.

The manufacturer states that it is necessary to contact only a small section of the pipe or tubing contour and the gauge will measure in any position, against the wall or in a corner. It is also claimed that covered pipe or tubing can be measured easily with this gauge by placing it between the covering joints or in a small opening near a union or other fitting, and that the gauge can be used in dark places and then carried to the light and read.

☆

C. M. MACKEY, branch manager for Westinghouse Electric Supply Company at Oklahoma City, has been promoted to southwestern district manager with headquarters at Dallas.



Three-Point Gauge

Bucyrus-Erie Firm Names Three Distributors

Three new distributors for Bucyrus-Erie oil well spudders have been appointed, according to a recent announcement by Bucyrus-Erie Company, South Milwaukee, Wisconsin.

Great Northern Tool & Supply Company, with home office at Billings, Montana, will be sales outlet for Bucyrus-Erie spudders in Wyoming and all of Montana, except the northwest corner of the state.

Randall-Zogg Supply Company of Owensboro, Kentucky, will handle the 24-L and 36-L spudders in the western half of Kentucky and a narrow strip of north central Tennessee. Headquarters of the Randall-Zogg Supply Company are at 1420 Lewis Street, Owensboro.

The Turner Valley Supply Company, Ltd., Calgary, Alberta, Canada, will distribute Bucyrus-Erie oil well drills in Saskatchewan and Alberta, with branch at Black Diamond, Alberta.

Multi-Flame Heating Nozzle

VICTOR EQUIPMENT COMPANY

A heating nozzle designed particularly for use with oxygen and the liquefied petroleum gases or natural gas is offered by Victor Equipment Company, 844 Folsom Street, San Francisco 7, California. The nozzle fits all Standard Victor welding torch butts but can also be sold complete.

The larger multi-flame nozzles are recommended for flame priming and descaling in inaccessible areas. All can be employed for silver brazing operations, preheating and bending.

The design incorporates an outer air mantle to protect the nozzle head against deflected heat. Its internal design is such that the cool pre-mixed gases carry away a substantial amount of accumulated heat, and in so doing become efficiently preheated for proper combustion.

Kobe's California Sales Division Offices Moved

The California Division sales offices of Kobe, Inc., were moved September 1 from the general offices on Slauson Avenue, Los Angeles, to 217 Wilson Building, Huntington Park. W. F. Slater, division manager, will be in charge.

Howard C. Sauer Heads Timken's Foreign Office

Howard C. Sauer has been named general manager of Timken Roller Bearing Company's new foreign division, with offices in Canton, Ohio.

Sauer joined the Timken Company in 1923, was appointed manager of the Detroit office in 1926, went to the Chicago office in 1930, and in 1940 became manager of the New York office. He recently returned from a leave of absence during which he was chief of the anti-friction bearing section of the WPB tools division.

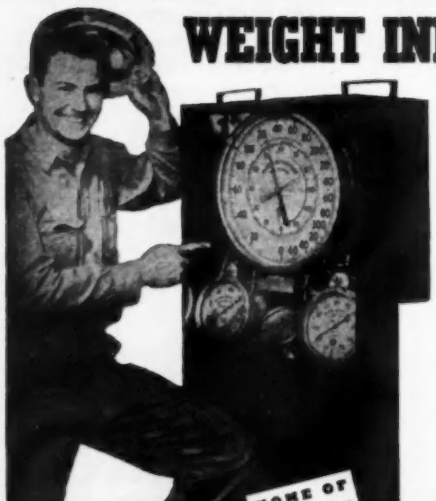
Pressure Booklet Issued

A booklet has been issued by Tube Turns, Inc., Louisville, Kentucky, giving allowable working pressures for welding fittings in five classes of piping—power, oil, district heating, gas and air, and refrigeration. Tables list allowable pressures at the indicated temperatures for any size and weight Tube-Turn fitting.

☆

KARL W. FREEMAN, former manager at Atlanta, Georgia, for the International Harvester Company, motor truck division, has been named southern district manager.

A. J. EDWARDS, former sales manager for Black, Sivalls & Bryson, has formed a partnership with M. F. Hampton to be known as M. F. Hampton & Company, with offices in the McBirney building, Tulsa. The firm will be sales representative for a line of supplies, many of which are adapted to pipe lines.



WEIGHT INDICATOR POINTS

IT'S NO ACCIDENT that the Martin-Decker Unitized Mud Pump Gauge is the world's finest, most sensitive and rugged instrument for measuring slush pump pressure. The oil industry's leading weight recording measurement and control concern devoted years of development work to combining a special indicating gauge, a patented diaphragm unit, and a built-in pulsation damper in one unitized instrument requiring no tubings or fittings for connection. And best of all, it can be moved from location to location on a moment's notice.

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In the Petroleum Industry, where more than 50,000,000 feet of Republic Electric Weld Casing and Tubing are demonstrating these advantages, you'll find many other Republic products—Alloy Steels, Sheets and Plates, Electric Weld Line Pipe, Electrunite Heat Exchanger Tubes and Upson Studs, Bolts and Nuts. They're proving their worth by the performance they give.

It is this proved field service, based on uniform high quality, that has raised Republic to a leading position as an oil country supplier.

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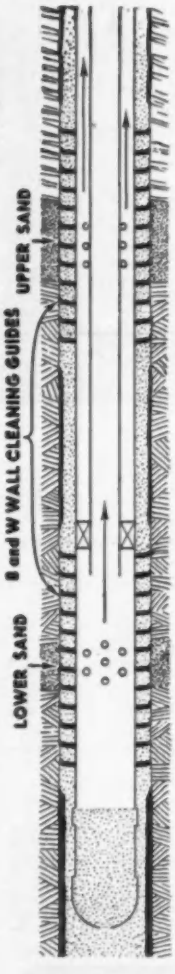
Wall Cleaning Guides



The advantages of dual completions, including the large savings of steel, increased production, etc., indicate an increase in this type of completion during the present emergency.

The first requirement in a successful dual completion is a good cement job. A good cement job is one where the set cement entirely fills the annulus and is in bond with the formation to maintain oil, gas and water in their original position and to prevent the migration of any fluid behind the casing.

B and W Wall Cleaning Guides, placed as shown in the diagram throughout the sections to be produced, scratch off the mud cake, center the casing, and insure the proper placement of the cement slurry in bond with the formation.

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ALBERT E. PIERCE, general production manager for Mid-Continent Petroleum Corporation, has been named vice president in charge of production. He joined the company in 1920 as a driller.

FRANK W. BEGRISCH, real estate operator of New York, has been elected to the board of directors of Phillips Petroleum Company, succeeding the late A. S. Woods.

C. D. WATSON, who has been on special assignment for The Carter Oil Company in Washington, D. C., since January, 1942, has returned to Tulsa to take over his duties as a director of the company.

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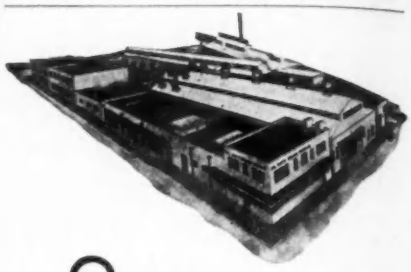

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